DOCUMENT RESUME

ED 134 318 PS 009 043

AUTHOR	Deloria, Dennis; And Others
TITLE	The National Home Start Evaluation Interim Report V: Summative Evaluation Results.
INSTITUTION	Abt Associates, Inc. Cambridge, Mass.; High/Scope Educational Research Foundation, Ypsilanti, Mich.
SPONS AGENCY	Office of Child Development (DHEW), Washington, D.C.; Office of Human Development (DHEW), Washington, D.C.
PUB DATE	1 Oct 74
CONTRACT	HEW-OS-72-127
NOTE	341p.; For other reports in this study, see ED 069 439-441, ED 077 583, ED 085 398, ED 091 074, ED 091 081, ED 092 225-229, ED 107 379-380 and PS 009 039-047
EDRS PRICE	MF-$0.83 HC-$18.07 Plus Postage.
DESCRIPTORS	Academic Achievement; Demonstration Programs; *Early Childhood Education; Emotional Development; *Evaluation Methods; Family Characteristics; Health Services; *Home Programs; *Home Visits; Intervention; Interviews; Measurement Instruments; Mothers; Nutrition; Observation; Parent Education; Preschool Children; *Program Evaluation; Questionnaires; Readiness; Screening Tests; Social Development; Statistical Data; *Summative Evaluation
IDENTIFIERS	*Project Home Start

ABSTRACT

These summative evaluation results are part of the National Home Start Evaluation interim report. Home Start, a federally-funded 3-year (1972-1975) home-based demonstration program for low-income families with 3-to 5-year-old children was designed to enhance a mother's skills in dealing with her own children and to provide comprehensive social-emotional, health and nutritional services. The data presented in this report were collected from 434 families in six of the 16 Home Start sites operating in the spring of 1974. The families belonged to one of three groups, the Home Start group (192 families), the delayed-entry control group (130 families), or the Head Start group (112 families). Included are reviews of psychometric analysis such as Preschool Inventory, Denver Developmental Screening Test, Child 8-block Task, Child Food Intake Questionnaire, Schaefer Behavior Inventory, Pupil Observation Checklist, High/Scope Home Environment Scale, Mother Behavior Observation Scale, Parent Interview and, 8-Block Sort Task. A number of tables and charts are included in this report. (Author/MS)

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This Report Was Prepared For:

The Department of Health, Education and Welfare
Office of Child Development
Early Childhood Research and Evaluation Branch
Dr. Esther Kresh, Project Officer

Under HEW Contract No. HEW-OS-72-127

THE NATIONAL HOME START EVALUATION
INTERIM REPORT V: SUMMATIVE EVALUATION RESULTS

October 1, 1974

PS 009043

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I

INTRODUCTION

Purpose of the Summative Report

The data presented in this report were collected from 434 families in six[1] of the 16 Home Start sites operating in the spring of 1974. The families belong to one of three groups, the Home Start group (192 families), the delayed-entry control group (130 families), or the Head Start group (112 families). All families entered the evaluation in fall 1973, when the Home Start and Head Start families entered their respective programs. The delayed-entry control group will enter the Home Start program in fall 1974. All of these families were among the 556 families included in the fall 1973 data collection, reported in Interim Report IV: Summative Evaluation Results (1974)[2]. The fall data serve as a pretest and the spring data reported in this volume serve as a seven month posttest for measuring the initial impact of the Home Start program. Data collected in fall 1974 will serve as a 12 month posttest and findings will be reported in Interim Report VI, scheduled for February 1975.

The overall purpose of the summative evaluation is to assess the impact of the Home Start program on enrolled families, using the control and Head Start families as reference groups. The summative evaluation is one part of a three part evaluation; the other major parts are formative evaluation examining program services and costs, and an information system describing changes in the overall program staff, families, and services over cumulative three month intervals. Results of these evaluation efforts are presented in separate volumes of this report.

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[1] The six sites include: Huntsville, Alabama; Dardanelle, Arkansas; Wichita, Kansas; Cleveland, Ohio; Houston, Texas; and Parkersburg, West Virginia.

[2] Throughout this volume, the abbreviated title "Interim Report IV" is used to designate the summative volume of that report.

The summative report and the supporting statistical analyses have two specific purposes:

- To assess the impact of the Home Start program on families after their first seven months of enrollment;
- To describe the characteristics and assess the quality of measures used to collect summative data.

The resulting information will be used to formulate recommendations, first, for improving the existing Home Start program, and second, for planning future home-based programs.

Overview of the National Home Start Program

Home Start is a program for disadvantaged preschool children and their families which is funded by the Office of Child Development, U.S. Department of Health, Education, and Welfare. The program started in March of 1972 and has been funded for a three-year demonstration period. Home Start is a home-based program providing Head Start-type comprehensive (nutrition, health, education, and social and psychological) services to low-income families with 3-5 year old children. What is meant by a home-based program is that services are provided in the family home rather than in a center setting.

A unique feature of Home Start is that it builds upon existing family strengths and assists parents in their role as the first and most important educators of their own children.

The primary purpose of the Home Start demonstration program is to obtain information on various approaches to home-based services. These data are expected to be of critical importance in assessing the cost-effectiveness of the home-based approach as compared with other approaches or systems of providing similar services. It is also anticipated that the demonstration will produce a legacy of information, materials, and trained people experienced in implementing home-based models.

The Home Start program has four major objectives, stated in the national Guidelines:

- to involve parents directly in the educational development of their children;

- to help strengthen in parents their capacity for facilitating the general development of their own children;

- to demonstrate methods of delivering comprehensive Head Start-type services to children and parents (or substitute parents) for whom a center-based program is not feasible;

- to determine the relative costs and benefits of center- and home-based comprehensive early childhood development programs, especially in areas where both types of programs are feasible.

Presently 16 Home Start programs, funded by the Office of Child Development, are in operation. Each program receives approximately $100,000 for a 12-month period and serves about 80 families. Families are included from a wide variety of locales and with different ethnic and cultural backgrounds--including white, black, urban, rural, Appalachian, Eskimo, Navajo, migrant, Spanish-speaking, and Oriental. Several programs are using television programs (such as Captain Kangaroo, Sesame Street, and the Appalachia Educational Laboratory's Around the Bend) as part of their educational component.

The Home Start program staff consists primarily of "home visitors," who visit the homes of enrolled families once or twice a week. In addition to working with the mother on the child's development, a home visitor discusses good nutrition, health problems, and social and psychological needs of the children and the families. When needed, home visitors or other program staff refer families to community agencies for specialized services.

Families enrolled in Home Start also participate in group activities or meetings on specific topics, such as parent effectiveness or health, for example, and take field trips to agencies which are of interest to the families. Each program has a policy-making council which sets policy for the local Home Start program, in which enrolled families participate.

Further information on the Home Start program can be found in:

> "The Home Start Demonstration Program: An Overview" (February, 1973), Office of Child Development. This booklet acquaints the reader with the overall Home Start program as well as introducing the 16 individual projects.

The National Home Start Evaluation Plan: fall 1973 to fall 1974 (August, 1973) outlines the essential features of the Home Start evaluation activities scheduled for the first 12 months of the formal evaluation phase.

"A Guide for Planning and Operating Home-Based Child Development Programs," (June, 1974), Office of Child Development. Based on the 16 Home Start projects, this guide details what is involved in planning and operating a home-based child development program.

"The National Home Start Evaluation: Interim Report I," (August, 1972), Interim Report II, (July, 1973), Interim Report III, (August, 1973), Interim Report IV, (June, 1974), prepared for the Office of Child Development by the High/Scope Educational Research Foundation and Abt Associates, Inc. These reports are based on six-month intervals of data collection and cover the following areas: program analyses, summative evaluation results, case studies, and cost analyses, and are available from ERIC.

Overview of the National Home Start Evaluation

The national Home Start evaluation is intended to answer the following questions which relate to future program planning in the Office of Child Development:

- Are Home Start program guidelines being followed in terms of the kinds of families and staff involved in the program, and the kinds of services provided?
- Do families in Home Start for one year achieve greater progress toward program objectives than similar families not in Home Start?
- Do Home Start children achieve the same developmental gains as Head Start children?
- What are the costs associated with Home Start and Head Start program operations?

The evaluation design incorporates three distinct components: the formative evaluation, the summative evaluation and the information system. The three are complementary ways of viewing the effects of Home Start. While all sites participate in the formative evaluation and information system, only six, selected as being representative of the rest of the programs, are involved in the summative evaluation.

Formative evaluation. Formative evaluation yields information that helps "form" programs as they are being developed by local program personnel. As conceived in Home Start, this type of evaluation consists of case studies (or narrative descriptions of each of the 16 programs) which are distributed to program staff and other interested persons to promote a continuous exchange of information. The case studies include a wide range of information about each program such as staff model, staff training, family needs, program goals, objectives and plans, instructional content areas, kinds of services provided, expenditure patterns and donated services and administrative organization. Information for individual program case studies is obtained by a trained interviewer who visits each program site to interview local administrators, directors, staff, and parents. During the formal evaluation phase, which began in fall 1973, case studies and updates are scheduled for each fall and spring for the six summative sites and each spring for the rest of the sites.

Summative evaluation. Summative evaluation, the second component, is intended to "summarize" the overall effectiveness of a program after completion of one or more years of operation. Two features characterize this kind of evaluation in the Home Start program. First, there are "before-and-after" measurements of parent and child performance along criteria provided in the Home Start Program Guidelines. The measures used for the evaluation include:

- Preschool Inventory
- Denver Developmental Screening Test
- Schaefer Behavior Inventory
- High/Scope Home Environment Scale
- 8-Block Sort Task
- Parent Interview
- Child Food Intake Questionnaire
- Height and Weight Measures
- Pupil Observation Checklist
- Mother Behavior Observation Scale

Second, there is a randomly assigned, delayed-entry "control" group who will not enter the Home Start program until after they have participated in one complete cycle of fall and spring testing. Outcomes for these children, who have not yet experienced Home Start, can then be compared with the outcomes for Home Start participants who have received full benefits. Control group children will receive a full year of Home Start benefits after their "control" year is finished.

"Before-and-after" measurements are scheduled each October and May through the three-year program. Local programs were given a full year to become operative, during which time the summative evaluation was limited to a pilot tryout of procedures. Data from the second and third years will be used to assess the impact of the national program. Data are gathered by locally hired community interviewers who travel to Michigan twice each year for special training.

Information system. An information system, designed to gather basic statistics about each of the 16 programs, forms the third component of the national evaluation. Information is gathered on family and staff characteristics, services provided to families, and program financial expenditures. These statistics are needed to help local and national staff make better administrative decisions, to assist in the interpretation of summative evaluation outcomes, and to serve as input to the cost-effectiveness analysis of the Home Start program which is scheduled for the last year of program operation. The necessary information is gathered by local program staff members as part of their routine record-keeping activities; then the information is summarized into quarterly reports which are sent to national staff.

II

METHODS: 1973 - 1974 SUMMATIVE EVALUATION

The spring 1974 summative design and procedures are summarized in this section, including the experimental design, family selection, measurement battery, data collection, data reduction and statistical analysis. Further information can be found in Interim Reports I, II, III and IV. Section II of Interim Report I presents the rationale for the selection of the measures used in the fall 1972 data collection. Interim Report II presents the results from fall 1972 data. Interim Report III presents the results from spring 1973 as well as a detailed evaluation plan for the entire fall 1973 to fall 1974 period. Interim Report IV presents the characteristics of the summative sample and the results from the fall 1973 data. A field procedures manual is presented in Appendix A of Interim Report IV.

Basic Design

This evaluation is based on a pre- and post-test design. Last fall, outcome measures were administered to three separate groups of families, all having children. The experimental group consists of families that entered Home Start in fall 1973. A delayed-entry control group consists of families entering Home Start in fall 1974, but identified for inclusion in the evaluation in fall 1973. Families from both groups were recruited at the same time and randomly assigned to one group or the other. A comparison group consists of families with children enrolled in Head Start programs located in the same sites as Home Start programs. Families were not randomly assigned to this group, but a subsample was randomly selected from naturally existing Head Start groups. All families who remained in the sample were retested in the spring, approximately seven months after the administration of the pretest.

Sample

The battery of outcome measures was administered to families in six Home Start sites: Huntsville, Alabama; Dardanelle, Arkansas; Wichita, Kansas; Cleveland, Ohio; Houston, Texas; and Parkersburg, West Virginia. Decisions about sites to be included were based on judgments about their representativeness as well as on certain practical considerations. A nonrandom procedure was adopted at this stage because there were compelling reasons for not including certain sites; among these were site start-up delays, cultural incompatibility of the measures, family migration, and geographic isolation.

Last fall, an attempt was made to include 40 families in each of the three treatment groups in sites that recruited a sufficient number of families. In most sites 40 was the maximum number of the Home Start openings available. All 40 were included in the fall 1973 measurement to ensure that a sufficient number would be available for measurement this spring, after normal attrition occurred. No attempt was made to replace families from any of the three groups leaving the evaluation during the year, since no entering measures would be available from replacement families to serve as a base for assessing change. Out of the original 556 families tested last fall, 434 remained in the spring sample.

In order to be eligible for the evaluation in the fall, Head Start children in any site were supposed to be the same age as the entering Home Start children from that site, come from the same geographical regions and not have any prior preschool experience. It was not always possible, however to meet these criteria. For example, Home Start usually served more counties within a region than Head Start; Head Start children had to live near a road, within busing distance of a center; and Head Start programs were three-year programs in some sites and therefore started the children at a younger age than Home Start.

Random assignment of families to the experimental and control groups, and random selection of families where more than 40 were available for a group, were performed by staff at the High/Scope Foundation using family rosters submitted by the Home Start and Head Start projects. Families were stratified by home visitor before random selection to ensure a workable match between families and available openings in each project. Non-English speaking families and families with handicapped children have not been included in this evaluation.

Analysis of the entering data from fall 1973 indicated that the randomization process had been successful: comparisons of the Home Start and control groups revealed almost no significant differences in demographic characteristics, child scores or parent measures. Attrition from fall to spring has not seriously affected the nature of the samples. Examination of the whole score results of families who remained in the sample compared to those who dropped out indicated no systematic differences between these two groups. The same was true for analyses made by group and by site so it appears that the success of the random sampling has been maintained.

Measurement Battery

Eleven measures were in the battery, including two children's tests, two child rating scales completed by adults, one mother rating scale completed by the community interviewer, three parent questionnaires, a parent-child interaction measure, and child height and weight. A list of the measures follows:

- Preschool Inventory
- Denver Developmental Screening Test
- Child 8-Block Task
- Schaefer Behavior Inventory
- Pupil Observation Checklist
- High/Scope Home Environment Scale
- Mother Behavior Observation Scale
- Parent Interview
- Child Food Intake Questionnaire
- 8-Block Sort Task
- Height and Weight

These eleven measures have been broken down into 59 variables which are relevant to the change analysis. Figure II-1 presents a matrix of these variables and the Home Start goals which they are intended to assess.

Figure II 1

VARIABLES USED TO ASSESS CHILD GOAL AREAS

	Child Goal Areas				
	School Readiness	Social-Emotional Development	Physical Development	Nutrition	Medical Care
Preschool Inventory	X				
8-Block Sort Task					
Child Score	X				
Child Talk	X				
Denver Developmental Screening Test					
Language	X				
Fine Motor			X		
Gross Motor			X		
Personal-Social		X			
Schaefer Behavior Inventory					
Task Orientation		X			
Extra-Introversion		X			
Hostility-Tolerance		X			
Pupil Observation Checklist					
Test Orientation		X			
Sociability		X			
Food Intake					
Milk Group				X	
Meat Group				X	
Egg Group				X	
A-Vegetables				X	
Citrus Fruits				X	
Other Vegetables				X	
Breads & Cereals				X	
Nutrition Total				X	
Vitamins				X	
Stature					
Height			X		
Weight			X		
Parent Interview					
Immunization Total					X
Months since doctor visit					X
Checkup or something wrong					X
Months since dentist visit					X
Checkup or something wrong					X

Figure II-1

VARIABLES TO ASSESS MOTHER GCAL AREAS
(continued)

	Mother Goal Areas			
	Mother/Child Relationship	Mother as Teacher	Home Materials for Child	Use of community Resources
High/Scope Home Environment Scale				
Mother Involvement	X			
Household Tasks	X			
Mother Teaches		X		
Books			X	
Playthings			X	
Mother Behavior Observation Scale				
Supportive	X			
Punitive	X			
8-Block Sort Task				
Request Talk		X		
Diagnostic		X		
Talk About		X		
Interactions/min.		X		
Mean Length String		X		
Feedback		X		
Parent Interview				
Welfare department				X
Food Stamps Program				X
Medicaid				X
Food commodities				X
Local hospital				X
Public health clinic				X
Mental health clinic				X
Family counseling agencies				X
Planned Parenthood				X
Day care program				X
Recreational programs				X
Legal aid program				X
Housing authority				X
State Employment office				X
Job training programs				X
Educational institutions				X
Organization Total				X
Mother Employment				X

The full battery was given to families in all three groups. Further descriptions of each of the measures are presented in Chapter IV and in each of the previous reports.

Data Collection

The battery of measures was administered to families at the six sites by community interviewers, hired locally at each site and trained in Michigan for five days before the data collection began. There were four community interviewers in each site having a Head Start project, and two or three in each of the other two. In addition, each site had a locally hired and specially trained site coordinator who assisted in training, monitoring, and scheduling the community interviewers.

In all six sites, data collection started in the first week in May, immediately following the training workshops. Family appointments and assignments of families to community interviewers for the first two weeks were set up in advance of the workshop by the site coordinators. A site coordinator accompanied each community interviewer on her first administration of each measure, to ensure that the proper procedures were followed. When necessary, additional training was provided to community interviewers before they were permitted to visit another family. During the third and fourth week of data collection, site monitors from High/Scope and Abt Associates accompanied each community interviewer on one visit to determine whether field procedures were being properly followed. Site coordinators accompanied community interviewers on visits each week that the monitors were not on site, visiting some Home Start families, some control families, and the Head Start centers in sites having them. No family was scheduled to have more than one visit by either a monitor or site coordinator.

The test battery was administered by the community interviewer in two or more visits for 85% of the Home Start families, 72% of the control families, and 57% of the Head Start families. Testing was done in the home for Home Start and control families, and in the Head Start centers for comparison children. Families were assigned to community interviewers randomly in urban sites, and by geographic region in rural sites to reduce costs. Although a special effort was made to see that each community interviewer had an equal number of Home Start, control, and Head Start families, in many cases families were not equally distributed.

Community interviewers forwarded all data collected each week to the site coordinators. The site coordinators logged all the completed measures and checked them for completeness and obvious scoring errors. Following this review, the site coordinator met with community interviewers or called them as necessary to correct discrepancies. The site coordinators then forwarded data to Abt Associates each week for more thorough quality review before they were sent to the High/Scope Foundation for coding and analysis.

Data Reduction

The data were reduced to machine readable form by the High/Scope Foundation data processing staff, following a series of fixed steps. Data for each testing visit were kept in separate envelopes for each family. These envelopes had a pre-printed checklist of tests which the community interviewer used to indicate which tests were administered at the testing session. Staff from Abt Associates verified that the envelopes contained all tests indicated on the checklists, examined the tests to insure that correct testing procedures were followed and forwarded the data, still in the individual envelopes to High/Scope. At High/Scope the envelopes were opened and the contents again verified against the checklist. Gummed labels with the child's name and family number were then attached to each test in the envelope and to the envelope itself. The labels had been printed by a computer using a file containing a roster of all families in the evaluation. The use of gummed labels eliminated the possibility of transcription errors in the family identification number. The envelope was then used as a source document for updating the testing monitoring file. The family number and codes for the tests administered were entered into a computer program which verified the family number and recorded on the testing monitoring file which tests were administered to the family during the visit. The program checked to ensure that none of the tests had been previously entered and warning messages were printed if any attempt was made to enter a test more than once. The envelopes were then filed in alphabetical order by site.

The tests were then scored and verified by High/Scope data processors and filed in batches by test type to await recording. When a sufficiently large batch of tests was accumulated, the tests were recorded on magnetic tape cassettes using a Texas Instruments model 733 data terminal. When the batch was completed the data were transmitted via telephone lines to disk files at the University of Michigan Computing Center. The data were then printed and the printouts manually verified against the test protocols. Errors were noted, corrected, and re-verified.

When the testing was completed and all tests had been scored, recorded and verified the files containing the test data were entered into a computer program for further verification. The program matched each test against the testing monitoring file to ensure that the family number was valid, that the test was coded as having been administered and that no test was recorded more than once. The program then coded the testing monitoring file to indicate which tests had been recorded for each child. Using the testing monitoring file and the file containing the test data, a computer program prepared filler records for those families having missing data. This procedure ensured that each test had the same number of records, thereby facilitating computer processing of the data.

Even though all of the data had been verified, the next step in processing was to use computer programs to perform all possible mechanical checks on the data. These checks included range-of-values checks, record length checks and sequence checks. After all the machine checks had been made, a random sample of about 10% of the total families was taken; the test data for these families were printed and again re-verified to obtain an estimate of the percentage of data that could still contain errors. The error rate for the re-verified data was found to be .0828% which means that there could be one error remaining for every 1,200 data points.

Next, working files compatible with available statistical programs were prepared. Up until this point the data files were kept separated by test, but to allow for intercorrelational analysis it was necessary to build a master file containing all the data. As each test was added to the master file, a positive check was made to ensure that data added were in the proper sequence and lined up by family with the master file.

At this stage many items had not been scored "pass" or "fail," nor had subtotals or totals been computed for the various measures. Another file was created to contain the item pass/fail scores, subtotals, and totals, all computed from the first file. At this point, decisions were made about how many items had to be present in order to arrive at a valid score for each measure, and the data for certain families were recorded as missing when necessary so they would be excluded from the later statistical computations. One of several computer scoring procedures was then used to calculate the scores for valid cases.

Statistical Analysis

As soon as data were transferred to the working files the statistical analyses began. Basically four categories of analyses were performed:

- First, the number of families and children, missing data, conditions of testing, and other information related to data quality were compiled. These analyses and their results are described in Chapter III.

- Second, item analyses were performed for individual measures, such as item response distributions, item percent passing, internal consistency reliability (alpha), item intercorrelations, principal components factor analyses and fall-spring psychometric analyses. These are described in Chapter IV.

- Third, analyses of whole scores were performed, such as total score means, total score standard deviations, correlations between total scores, and factor analyses of all total scores in the battery. These are described in Chapter IV and V.

- Fourth, analyses of fall-spring change scores and analyses of covariance were performed to identify differences between Home Start, control and Head Start children. Chapter VI describes the results of analyses of program effects.

All statistical computations were performed via terminals connected to the IBM 360/67 computer at the University of Michigan. The basic statistical package used for most file manipulations and descriptive statistical calculations was the Michigan Interactive Data Analysis System (MIDAS) developed at the Statistical Research Laboratory of the University of Michigan and documented in MIDAS (Fox and Guire, 1973). Additional programs were used for specialized tasks such as computing ages, screening for certain cases or data codes not possible in MIDAS, test scoring and item analyses, and the various other computer operations that were needed. Most of these programs were written by High/Scope Foundation staff and consultants. Factor analyses were performed using program FACTOR, documented in Veldman (1967). This program computes a principal components analysis and image analysis with a varimax rotation, and allows for missing data through the use of a missing data intercorrelation subroutine. All factors whose roots exceed the eigenvalue cutoff of 1.0 are presented in the tables of factor loadings, unless reported otherwise.

III

DATA QUALITY

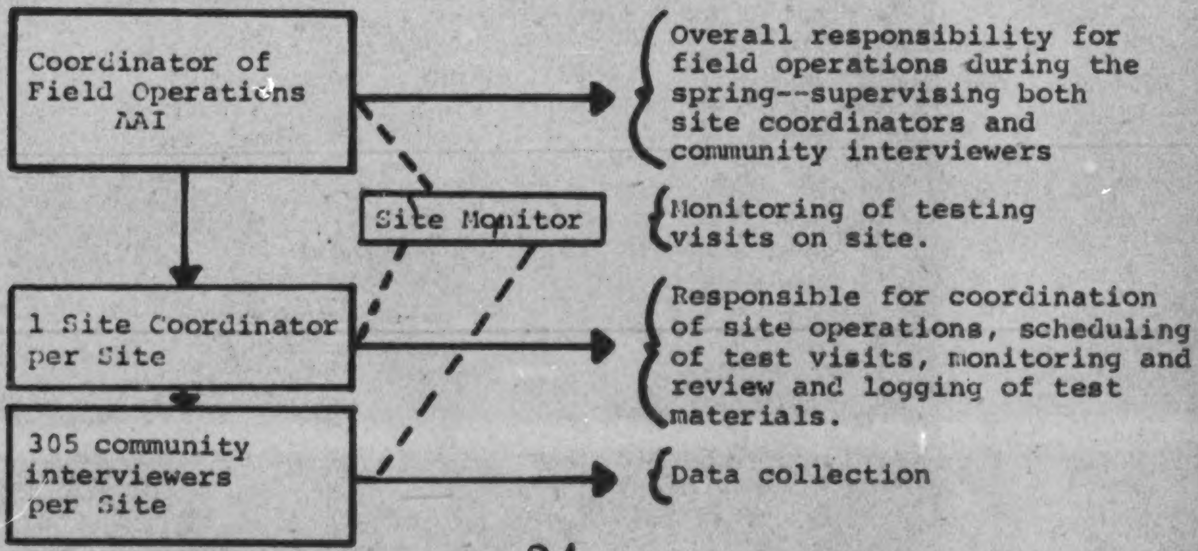
The discussion of the quality of the Home Start data is organized in three sections.

The first section focuses on changes that were made this spring to the fall 1973 field operations design and on the quality of the data collected in the spring. The second section discusses sample attrition that occurred from fall to spring and characteristics of the families sampled in the spring. The last section discusses the measurement battery in terms of length, missing data, parental reactions and testing conditions. All three sections provide comparisons of the quality of the data collected this spring with the fall 1973 data.

Field Operations

Field Organization

The following chart shows the field organization established for the data collection and coordination of testing visits for five of the six summative sites during the spring of 1974. A


Coordinator of Field Operations AAI
Overall responsibility for field operations during the spring--supervising both site coordinators and community interviewers
Site Monitor
Monitoring of testing visits on site.
1 Site Coordinator per Site
Responsible for coordination of site operations, scheduling of test visits, monitoring and review and logging of test materials.
305 community interviewers per Site
Data collection

different arrangement was made in Cleveland, Ohio because of a significant decrease in the number of families to be tested. In Ohio, the former site coordinator and one of the community interviewers became responsible for all on-site operations. They monitored each other's testing performance weekly.

Recruitment of Field Staff

There was no change in procedures followed during the fall of 1973 to recruit field staff for the evaluation. Procedures are outlined in detail in Chapter III of the Summative Evaluation Interim Report IV, June 1974. Staff attrition between fall and spring remained approximately the same as for the previous period (36.8% for the period spring-fall 1973 and 37.5% for the fall-spring 1974 period). There was no attrition during the course of testing, although one community interviewer from Texas accepted an additional part-time position, which meant that the site coordinator did some testing. See Table III-1 for the number of children, by group within site, tested by each community interviewer and the one site coordinator.

Training

Three types of training were conducted during the spring at Camp High/Scope in Clinton, Michigan:

- One-day site coordinator training in field procedures and logistics as outlined in the spring 1974 Field Procedures Manual;
- Three-day training of trainers (including the site coordinators who were involved in the training as co-trainers); and
- Six-day community interviewer training in the revised measurement battery and field procedures to be followed on site.

During the spring, trainees were grouped by experience level for the first time. Prior to the training conference individual testing profiles had been prepared on the basis of monitoring and performance evaluations in the fall to enable trainers to individualize training as much as possible. In addition to grouping trainees by experience level, trainers were assigned to groups on a rotating basis rather than working with one group for the entire six-day conference. This rotation of trainers and co-trainers permitted trainees to be involved in various training techniques used by the trainers and allowed more than one trainer to evaluate the performance of community interviewers.

Community interviewers who joined the field staff for the first time in the spring were provided with an opportunity to visit with families in the Clinton area who had a 3- to 5-year-old child for a practice session on the Preschool Inventory, the Denver Developmental Screening Test, the 8-Block Sort Task and the two Parent Interviews.[1]

In addition to the summative measurement battery and field procedures, community interviewers were trained in the Home Visit Observation Instrument. Training procedures and problem areas with this instrument are discussed in the Program Analysis volume of this report.

During the course of the training conference, a number of scoring and administration procedures were clarified for all of the measures. A memorandum outlining these clarifications is included in Appendix A.

The measurement battery was changed slightly for the fall data collection effort. Changes on each of the measurements are discussed in subsequent chapters.

Testing and Interviewing

In all sites, site coordinators were responsible for scheduling testing visits to families prior to the training conference in order to enable community interviewers to start testing immediately following the training conference. This was especially important since the Preschool Inventory (PSI) and Denver Development Screening Test (DDST) data were to be collected exactly at 31-week intervals for all children. Due to a change in the order of instrument administration, it was not possible to collect the Height and Weight data exactly 31 weeks from the previous data collection for each child. During the first visit in the spring, the Height and Weight was administered along with the PSI; it had been coupled with the DDST on the second visit in the fall.

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[1] Because of additions to the Parent Interview, the interview form was divided into two parts to avoid one lengthy interview.

Order of instrument administration. Community interviewers were instructed to follow the order of instrument administration noted below. They were permitted however, to modify it if circumstances made it necessary.

First Visit

- Preschool Inventory - Focal Child and Sibling
- Height and Weight - Focal Child and Sibling
- Parent Interview I - Focal Parent
- Schaefer Behavior Inventory - Focal Parent
- Food Intake Questionnaire - Focal Parent
- Home Environment Scale - Focal Parent

Second Visit

- Denver Developmental Screening Test - Focal Child
- 8-Block Sort Task - Focal Parent and Child
- Parent Interview II - Focal Parent

Following Visits

- Tester Logs
- Mother Behavior Observation Scale
- Pupil Observation Checklist

Time between testing. To shorten the testing period from 16 weeks in the fall to 10 weeks in the spring, families tested after the first of December were visited during the last week of the spring data collection period. Table III-2 shows the percent of families in each of the three groups (Home Start, control group and Head Start) that were administered the PSI and DDST exactly 31 weeks following the fall testing. Table III-3 shows the mean number of weeks between testing of the PSI.

Although 59 PSI's and 88 DDST's were not collected on schedule, only 22 PSI's and 35 DDST's were administered more than one week late.

Unsuccessful visits. During the spring, there was a slight drop in the number of unsuccessful visits that were made to families (202 in the fall compared with 157 unsuccessful visits in the spring). This decrease is partially the result of a decrease in the total number of families that were tested during the spring. The first figure in each column in Table III-4 shows the total number of unsuccessful visits that were made by site to each of the three family groups. The second figure represents the total number of families in each of the three groups to which unsuccessful visits were made. Five families were dropped from the spring evaluation because three or more unsuccessful visits to the family were made. In the fall, 12 families were dropped from the sample for these reasons.

Problem areas. One of the major problems encountered during the spring was locating control group families and setting up appointments for testing visits. A number of programs had not been in touch with these families since the fall, and it was often difficult to obtain current addresses for families that had moved. Site coordinators worked with welfare agencies, telephone, gas and electric companies, and former neighbors of the family to obtain a current address. Their efforts were not always successful, however, as is shown in Table III-11: Reasons for Non-participation in the Evaluation.

There was a significant increase in the problems with the recording of the 8-Block Sort Task. A total of 23 tapes could not be coded for the following reasons: tape was blank; poor testing conditions;[1] mother teaching part was partially or completely in Spanish. While the latter two problems are beyond the control of the testers, at the training conference emphasis will be placed on proper recording procedures and machine usage in order to reduce the number of uncodeable tapes.

A revised procedure of obtaining food intake information on Head Start children was followed during the spring. A simplified Food Intake Questionnaire was sent to the Head Start programs to be completed by the teacher or aide responsible for eating with the children one day in advance of the testing visit. On the form teachers or aides were asked to record the types and amounts of food each child in the sample ate. While the programs were called two days in advance of the testing visit to remind them to collect this information, 50% of the programs failed to do so. In centers where the forms were not completed. community interviewers had to interview staff for this information as was done in the fall. Frequently, teachers and aides could recall the types of food eaten but not quantities.

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[1] Poor testing conditions consisted primarily of more than one adult teaching the task to the child and active participation of siblings during the teaching session. Both of these make it impossible to code the interactions of focal parent with focal child.

Spring Schedule

Although plans called for completing the entire field operations by July 5, the final data collection was not completed until mid-July. The time schedule followed for the spring field operations is noted below:

March 25-26 & April 10-11 - Recruitment of field staff
April 15-19 - Site start-up and preparation
April 18-19 - Site coordinator training
April 19-21 - Training of trainers
April 21-27 - Community interviewer training
April 29- May 10 - Start-up testing
April 13-24 - Monitoring visits
July 5 - 99% of data collected
July 12 - All data collection complete

Monitoring Data Collection

Site coordinators were again responsible for monitoring each community interviewer during the first two weeks of testing. During this period, each community interviewer was accompanied on her first testing visit of the week and was given technical assistance if needed prior to being allowed to test without supervision. Following the two weeks of start-up testing, the site coordinator or site monitor (who visited the site during weeks 3 and 4 of the evaluation) monitored community interviewer performance weekly.

Inter-judge reliability of scoring. Inter-judge reliability of scoring between community interviewers and site coordinators increased on both the PSI and DDST. Table III-5, shows a comparison of fall and spring inter-judge reliability figures.

Table III-5

COMPARISON OF FALL-SPRING
INTER-JUDGE RELIABILITY

Instrument	Fall 1973	Spring 1974	Spring Range
PSI	95.6%	97.9%	96.1 - 99.5%
DDST	95.1%	95.5%	91.3 - 97.8%

On the *Preschool Inventory*, 56.9% of the scoring discrepancies were in the actual scoring of the child's response; 26.5% in indicating whether or not the child's response was verbal; and 16.6% in writing in the child's verbal response in the margin. The discrepancies were fairly evenly distributed among PSI items.

On the *Denver Developmental Screening Test*, there were only two items on which inter-judge reliability was low: Items #18 and #19 Forward Heel-to-Toe Walk (29.8% of discrepancies) and Backward Heel-to-Toe Walk (25% of discrepancies). The reason for the discrepancies is that the community interviewer is in a more advantageous position to see child movements than the site coordinator.

On the *8-Block Sort Task*, discrepancies in inter-judge reliability of community interviewers and site coordinators averaged 2.7 placements per 8-Block administration. This is a significant decrease in discrepancies since the fall (4.5 placements per 8-Block administration). Half (50.0%) of the discrepancies were in placements the focal parent made, and 46.6% in child placements. The remaining 3.6% of the discrepancies were errors in recording the child's final placement (2.7%) and punishments (0.9%).

Measurement administration errors. In addition to presenting statistics on inter-judge reliability of community interviewers and site coordinators in terms of scoring, it is equally important to review measurement administration errors since they affect data quality to the same extent. As shown in Table III-6, there was a meaningful decrease in the average number of administration errors for each of the measures. In addition to indicating fall and spring averages for each measure, Table III-6 shows site ranges and the total number of administrations for each measure that were monitored.

The type of administration errors made on each of the instruments can be broken down by error *category*. Noted in Tables III-7 to III-9 are percentages of the total number of administration errors for each of the categories. Table III-7 presents the breakdown of administration errors for the PSI and the DDST, Table III-8 for the 8-Block, and Table III-9 for the parent questionnaires and the Height and Weight. Areas of concern which need special attention during subsequent training sessions are underlined.

The Spring Sample

Family Attrition from Fall to Spring

Table III-10 shows the attrition for Home Start and control families by site since last spring. Figures are only reported for those families that were involved in the summative evaluation last fall. The figures in parentheses represent the total number of families dropped by group and by site. The reasons for non-participation are presented in Table III-11.

The attrition figures for Home Start families are 35.8% fewer than total family terminations reported in the quarterly information system for the same period (Oct. 1-June 30). The lower attrition of test families is primarily due to special enrollment guidelines issued for the six summative sites by the Office of Child Development in order to keep enrollment of test families as stable as possible.

Tables III-12 through III-14 compare by group, the whole score variables of the children who remained in the spring sample versus those who dropped out. Table III-15 makes the same comparisons for those Home Start children who remained in the spring sample versus the control group children who remained in. The number of significant differences were so few that we can conclude that there were no systematic differences between children who remained in the sample and those who dropped out. Similar comparisons by site also failed to show any systematic differences.

Characteristics of Families Sampled

Table III-16 presents the number, age and sex of focal children and their siblings involved in the evaluation for the total sample and the three groups by site. In addition, the table shows the average number of focal children and siblings per family.

This spring there were 434 focal children in the Home Start evaluation ranging in age from 38 months to 78 months. The mean age was 54.3 months; 84.2% of the children were in the 4- to 5-year-old bracket. Children from Alabama had the highest mean age (58.5 months) and Ohio the lowest (48.3 months). Although the site means differed by as much as 10 months, age differences between groups ranged only two months, with Home Start and Head Start generally younger (54.3 and 53.4 months) than controls (55.2). This corresponds to the data from last fall when the total sample was an average of seven months younger.

There were 56 siblings in this spring's evaluation--20 from the control group and 36 from Home Start. (Head Start siblings were not tested because testing sessions were generally held at the Head Start centers.) The siblings ranged in age from 37 to 76 months with a mean age of 58.2 months, which is approximately six months higher than their mean age last fall. Site differences in sibling age were even larger than for the focal children; Arkansas children were the youngest (mean age of 47.0) while Ohio siblings showed the highest mean (68.0 months). Group differences in mean age were considerably smaller, with Home Start siblings having a mean age of 59.3 months and the control group 56.0 months. There was only a one-month difference between the groups of siblings tested last fall.

Sex distribution was still relatively even across all sites for the focal children although one site had 25% more boys than girls. As found last fall, the sex distribution was relatively even in each of the groups. The siblings were fairly well balanced across sites as well as in the total sample, which was an improvement over last fall's distribution.

Although the majority of families in the total sample are from urban areas (see Table III-17 below) a greater percent of Head Start families live in urban areas. This difference is also reflected in the families' SES indices,[1] education and occupational levels (see Table III-18). Head Start as a group has a lower unemployment rate, a higher percentage of mothers employed and higher average levels for occupations and mother's education. Consequently, the average SES index is higher. The difference in employment rates is at least partially attributable to the Head Start policy in some sites which requires a certain percentage of the families to have both parents employed.

Table III-17
FAMILY LOCATION

	Rural	Urban
Home Start	42.4%	57.8%
Control	45.0%	55.0%
Head Start	26.8%	73.2%
Total Sample	39.0%	61.0%

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[1] The SES index is based on two factors: Mother's education (number of years of schooling completed) and the Duncan socioeconomic index of the family wage earner (if more than one family member was employed the higher status code was used). The Duncan index ranged from 1 to 84 for the test sample. Standard scores (mean of 0, SD of 1.0) were created for the two indices; SES is the sum of the two standard scores plus 5, resulting in an index with a mean of 5.0 and an SD of 1.5.

Although the SES index is similar across sites (ranging from 4.4 to 5.3) the occupation index of parents in various sites differs markedly. In Kansas and Ohio the mean index is 1 due to a high unemployment rate, in Arkansas and West Virginia it is 9 and in Alabama and Texas the mean level is 15. All of these figures dealing with employment and education closely match those obtained in the fall and no patterns of change were discernible.

Measurement Battery

Battery Length

The mean time for each test as well as the total child, parent and total battery time is presented in Table III-19 for the three groups and the total sample (fall and spring). The mean time for the child was 34.3 minutes, approximately 2 minutes less than the fall, and for the parent it was 33.6, approximately 1-1/2 minutes less. The 8-Block parent-child interaction remained virtually the same (21.3). Consequently the mean total battery time (89.2) was about 3-1/2 minutes shorter than the fall time. The three groups were within about two minutes of each other on all instruments and totals as compared to last fall when there was as much as a 9-minute range on the total child time.

Incidence of Missing Data

Table III-20 presents the incidence of and reasons for missing data for each test. These figures are relatively high because they represent all missing data--missing items as well as missing tests. In fact, most of the incidents reported here refer to missing test items rather than complete tests.

Forty-one percent of the missing data comes from the PSI, probably because it is the first instrument administered and therefore rapport problems occur with greatest frequency. In almost all of the cases of missing data on child measures (and the 8-Block) "child refusal" was cited as the cause. However, the incidence of child refusal as well as the other problems decreased markedly from the fall data collection. Overall only 4.3% of the instruments had missing data this spring compared to 7.0% in the fall. This decrease can be attributed to the increased age of the children, familiarity of the families with the testing situation and improved performance on the part of the testers.

Parental Reactions to Testing

Parental reactions to individual instruments were obtained on the Parent Interview. Their responses are presented in Table III-21. As in the fall, the parents reacted very favorably to all measures, although the 8-Block Sort Task still remained the least liked. When parents did have objections, the major complaint was that the tests were too difficult. Other responses included complaints that the tests took too much time, were too limited or too personal.

Conditions of Testing

Information gathered about testing conditions is summarized for the three groups and the total sample in Table III-22. In addition, the fall means are included for comparison purposes. The information was obtained through the use of tester logs which were completed after each testing session. Because of the small number of third visits, logs for the second and third visits were combined.

Mothers were present during 84.9% of the testing sessions this spring as compared to 89.4% in the fall. There were approximately 30% more Home Start and control group mothers present than Head Start mothers, probably due to the fact that Head Start children were tested at the center rather than in their homes. The fall figures were comparable for Home Start and control but the Head Start percentage dropped ten points. Head Start also had a much lower percentage of teachers present as compared to Home Start's home visitors, although the figures were similar to last fall. With mothers and teachers present less often, Head Start consequently averaged fewer people present during testing (3.6) as compared to Home Start and the control group (5.3 and 5.5).

The location of testing for Home Start and control groups varied, but like last fall, testing most often occurred in the living room. This spring more testing was done on child-sized tables or on the floor than last fall. Since the majority of Head Start families were tested at the Head Start centers, nearly half of the testing was done partially or completely on child-sized tables; when testing occurred in the homes, large tables and the floor, or a combination of the two, were most frequently used.

The percent of visits rated "noisy" this time was comparable to last fall (25.8% as compared to 26.7% in the fall) although noisy Head Start visits decreased by more than ten points. The Head Start testing sessions were, on the average more noisy than the other two groups on the first visit but less noisy on the second. The community interviewers only recorded problems for 16.8% of the total sample visits, much lower than the 25.5% recorded in the fall. Of those visits where problems were recorded, 37% were due to interference and 39% to child refusal. The percent of interference was slightly greater than last fall but the percent of refusal slightly lower. All three groups were similar on interference but the Home Start and Head Start children tended to refuse testing less often than the control group children. This might be attributed to the opportunity to develop social skills that the two programs provide. Among other problems noted were sickness, language problems and tester error.

Summary

The factors examined to assess the quality of the summative data lead to the conclusion that this spring's data are of higher quality than last fall's. Characteristics of the sample remained stable while the administration errors and incidence of missing data decreased. Care will be taken to maintain and improve this current level of quality.

IV

PSYCHOMETRIC ANALYSES

Interim Report IV (March, 1974) described the psychometric characteristics of each measure based on data collected in fall 1973. At that time the children in Home Start and Head Start had just entered their respective programs; the control children, of course, were not in a program. In the present report the same analyses are reported for the spring 1974 data. The analyses have been carried out on the total sample of 434 Home Start, control and Head Start children still available in spring 1974.

The analyses examine the internal characteristics and the whole-score characteristics of each instrument. The purpose of these analyses is to reexamine the strengths and weaknesses of individual items and of scale scores created from the items. Past analyses have identified "weak" items and in most cases these have been modified or eliminated. Items were considered "weak" when they failed to discriminate among age groups, yielded erratic scores over time, or were unusually difficult to interpret.

Since the purpose of these analyses is to determine whether the psychometric characteristics of the instruments remained substantially similar for the spring data when compared with the fall data, the focus is on analyses of the total sample. Knowledge of the stability or lack of stability in fall to spring test characteristics is essential to proper interpretation of findings from the change analyses. It should be remembered, however, that some differences in factor structure, for example, may occur because of the increased age of the children and possible program effects for the Home Start and Head Start children. When certain psychometric characteristics are reported by group (e.g. percent passing each item, number of factors extracted or alpha coefficient) it is for the purpose of judging the comparability of the instrument characteristics across populations. None of the findings reported in this section of the report should be used to judge program effects. The analyses have been carried out on the total sample of children tested this spring and have not been limited to only those with complete fall and spring data. Furthermore, these analyses do not take into account individual or group differences in entering levels on any of the variables.

For the spring 1974 data the following internal characteristics are reported for each instrument where appropriate:

- Distribution of responses across the scoring categories of each item;
- Percent of persons passing each item in each six-month age interval;
- Item and scale score intercorrelations;
- Inter-item and item-scale score correlations;
- Factor structure among items;
- Internal consistency reliability (coefficient alpha);
- Whole score descriptive statistics;
- Stability and change in item responses from fall to spring;
- Average growth from fall to spring.

The response distributions provide an indication of the appropriateness of each item for the populations sampled. A high proportion of "refusals,"for example, may indicate that testers had difficulty establishing rapport. A high proportion of "wrong" responses, on the other hand, may indicate the item is too difficult. Percent passing figures indicate whether individual items are developmental in nature, i.e., by demonstrating increased percent passing with increasing age.

Two indices of the adequacy of the item intercorrelations are reported. The Kaiser statistic (Kaiser, 1971; Dziuban & Shirkey 1974a, 1974b) is considered to be a measure of sampling adequacy. The obtained value is a function of the number of variables (items), the number of factors obtained in the principal components solution, the number of subjects and the general level of the intercorrelations. Kaiser suggests that values in the .80s and .90s are necessary in order to have adequate factor-analytic data.[1] The second index is the median squared multiple correlation of each item with the remaining items.

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[1] Kaiser's index is as follows:

.90 and above - marvelous
In the .80s - meritorious
In the .70s - middling
In the .60s - mediocre
In the .50s - miserable
Below .50 - unacceptable

The alpha coefficient is reported as the index of the internal consistency of each scale or test score (when items are dichotomous alpha is equivalent to KR-20). Alpha is an important index since it sets an upper limit to a scale's reliability (Nunnally, 1967). Internal consistency reliability is generally close to alternate form reliability.

Descriptive statistics for whole scores are examined to identify the ability range and precision of each measure. These include means, standard deviations, standard errors of the mean and fall-to-spring change in means, where possible. Measures must be neither so difficult that all children score at the test "floor," nor so easy that they score at the test "ceiling"; mean spring scores which approach the maximum possible on any scale or test may suggest a ceiling effect. When compared to expected increases due to program effects, the standard deviations of whole scores should be small to insure enough precision to detect real intergroup differences with the available number of families in the evaluation.

Fall-to-spring changes are reported for the Preschool Inventory, Denver Developmental Screening Test, Schaefer Behavior Inventory, Pupil Observation Checklist, and Home Environment Scale. For these analyses only children who were tested both in the fall and the spring are included. Internal consistency and fall-spring item correlations are reported for this sample. Measures of change or growth from fall to spring are presented, first in terms of total scores or scale scores, then in terms of individual items. For each of these measures a factor analysis of item change scores was also calculated to determine whether the relationship among item changes is similar to the relationship among spring scores.

Analyses of Child Measures

Preschool Inventory (PSI)

The PSI is a general measure of children's achievement in areas that are often regarded as necessary for success in school. Children are asked questions of general knowledge (e.g., "What does a dentist do?") and basic concepts (e.g., "Put the blue car under the green box"). The same 32-item version used in the previous Home Start data collections was again administered this spring. Since the fall there have been no major modifications in the administration or scoring of this test. The PSI items are given in Table IV-1, along with the numbers used to identify each item in the following tables. The PSI is one of two measures administered to siblings as well as to focal children. The analysis of the sibling data will be presented after the analysis of the data on focal children.

Spring 1974 Analyses--Focal Children

The PSI was administered to all of the 434 focal children. Children were included in the analyses, however, only if they had a response recorded for at least 28 of the 32 items. The minimum number refers to the number of items which were administered and which received a valid score--i.e., any one of the five coding categories, correct (C), wrong (W), don't know (DK), refusal (R), or no response (NR). It is assumed that if a child completed the test, an R or NR may be just as indicative of "not knowing" an answer as a W would be. The fact that, for children who completed the test, R and NR were recorded for only a few items supports this assumption. The 69 children who did not complete the test were, on the average, five months younger than the other children.

If Rs and NRs occur frequently during a test, this may be indicative of shyness, uncooperativeness, or poor rapport with the tester. For this reason, community interviewers were instructed to stop administering the PSI if a child made any combination of DKs, Rs or NRs on four consecutive items. Because of tester error, however, there were 14 cases in which the test was continued and completed after four consecutive DKs, Rs or NRs. Rather than discard these cases, it is assumed that the excessive Rs and NRs may be valid indicators of "not knowing" the correct response.

In summary, of the 434 focal children to whom the test was administered, 365 completed the test. Fourteen of the children tested responded with four consecutive DKs, Rs or NRs but still completed at least 28 items. Thus all of the analyses of the PSI data are based on a sample of 365 children who responded to at least 28 of the 32 items except for the whole score analyses (29-item version) in which one child who completed the test was excluded because he had no correct responses.

Response distributions. The percentage of children who responded in each scoring category for each item is presented in Table IV-2. When compared with the fall, the spring distributions show higher percent correct and lower percents of W, DK, R, and NR responses. These findings are, to an extent, predictable considering the fact that the children averaged seven months older than those tested last fall. A comparison of the mean percent of the total sample responding in each category for the two data collection times is presented in Table IV-3 below (these are the means of the percents for all 32 items):

Table IV-3

PSI--Mean Percent Responding

	N	C	W	DK	R	NR	Mean Age*
Fall 1973	426	31.3	56.8	5.2	3.0	3.4	47 months
Spring 1974	365	45.1	48.1	3.0	1.4	2.4	54 months

An examination of the spring 1974 response distributions within each group (Table IV-4, below) showed that the children in Home Start and Head Start groups had higher percentages of correct responses and lower percentages of wrong responses than the children in the control group. However, the three groups were similar in the DK, R and NR categories.

Table IV-4

PSI--Mean Percent Responding by Group

	N	C	W	DK	R	NR	Mean Age*
Home Start	163	46.1	46.9	3.1	1.6	2.2	54 months
Control	102	41.2	51.7	3.6	1.2	2.3	55 months
Head Start	100	47.2	46.7	2.4	1.4	2.7	53 months

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*These ages are based only on children who had acceptable PSI tests, not the entire sample.

As found last fall, the items which evoked the most DK, NR and R responses in all three groups were items 8 through 13, the items which require the most complex verbal responses. The items which the children most often got wrong were items 7 ("Put 2 cars behind the box in the middle"), 17 ("How many toes do you have?") and 24 ("Which of these two groups has more checkers in it?").

Although the difference was not as pronounced as last fall, Head Start children were still the least verbal of the three groups. The groups were quite similar on items that required a verbal response (generally over 90 percent of children) but on times which did not require verbal responses, Head Start was often 10 percentage points lower than the others. The total verbal score of Head Start did increase from fall to spring (16.4 to 17.3) as compared to the score of Home Start which remained the same and the control group which decreased (19.9 to 18.6).[1] However, these scores are negatively correlated with the PSI total score because on items that do not require verbalization, children who failed the item were verbal, but those who passed were not. Originally verbal data were collected to measure whether verbalizations increased, but since the results are negatively correlated with the PSI total, these data will no longer be analyzed.

Percent passing. The percent of children passing each item is presented by group in Table IV-5. For the total sample, with the exception of item 24 ("Which of these 2 groups has more checkers in it?"), the percentages are higher than those from the fall. The range however, is quite similar, 3.0 - 86.8 as compared to 2.8 - 82.6 in the fall. The average gain on an item was 14 percentage points. Three items, 3, 11 and 19 ("What is this?"-knee; "What does the dentist do?" and "Point to the middle one") showed gains of more than 23 points.

Among the three groups, Head Start had the highest percent passing on 18 of the items, Home Start on 10 and the control group on 4. The items which produced the greatest discrepancies among the three groups (greater than 20 percentage points) were items 11 ("What does a dentist do?"), 12 ("Which way does a phonograph record go?") and 29 ("Color the square purple"). In each of the three cases, the control group ranked lowest.

The percent passing each item is presented by age in Table IV-6. The percentages generally increased with age as would be expected. When comparing data to last fall, within each age grouping the spring figures were, for the most part, higher.

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[1] The total verbal scores reported in Interim Report IV, p. 44, were inaccurate.

Correlations. An intercorrelation matrix of the 32 items and the item-total correlations (corrected for overlap) are presented in Table IV-7. The intercorrelations obtained this spring were generally higher than those obtained in the fall. For the intercorrelation matrix based on the total sample, there were only six (instead of eight items which correlated less than .20 with the total (items 1, 18, 22, 23, 24, and 25). In both the Head Start and Home Start data there were only four items with correlations less than .20, but in the control group there were 11. As in the past data collections, three items--1 ("What is your first name?"), 22 ("Point to the second checker") and 23 ("Which group has less checkers in it?")--were among the lowest in terms of item-total correlations. Therefore, like last fall, these items were deleted before calculating scores for the analysis of group differences, thus making 29 the maximum PSI score possible. However, all other PSI analyses in this report, including the descriptive data, are based on the 32-item PSI.

Factor analysis. From this spring's data, 11 factors with eigenvalues greater than 1.0 were extracted in the principal components factor analysis with varimax rotation (last fall ten factors were extracted). Although some item clusters were similar, only one two-item factor matched exactly in the fall and spring. The rotated factor loadings and the items loading highest on each factor are presented in Tables IV-8 and IV-9. The 11 factors obtained this spring accounted for 56.5% of the total variance (very similar to the 57.0% reported last fall). The Kaiser statistic was .49 and the median multiple squared R was .24.

When principal components analyses were computed separately for the three groups, the analysis of Home Start extracted 11 factors accounting for 61.5% of the total variance; for the control group 13 factors, accounting for 68.5% of the variance, were extracted; and for Head Start 12 factors accounted for 67.3% of the variance. In summary, these analyses confirm the previous findings that items from the PSI are factorally complex and not easily separated into distinct, interpretable factors.

Reliability. The total score on the PSI was computed by summing the number of correct responses for each child. The alpha internal consistency reliability of the resulting scale (.83) was higher than the alpha coefficient obtained last fall (.77). Alpha coefficients for the Home Start, control and Head Start groups were, respectively, .86, .74 and .82.

Whole score descriptive data. A comparison of the mean PSI score (based on 29 items) for each group is presented in Table IV-10 below. These means are several points higher than those obtained by the three groups last fall (8.4, 8.5, and 9.1 respectively); the total sample mean is 4.3 points greater than last fall's figure (8.6).

Table IV-10

Spring 1974 PSI Scores[1]

Home Start	163	13.3	6.1	.48
Control	102	11.8	4.7	.47
Head Start	99[2]	13.5	5.3	.54
Total Sample	364[2]	12.9	5.6	.30

The means, standard deviations and standard errors of the means for the 32-item version of the PSI are presented for the total sample by age groups and sex in Table IV-11. An examination of this table indicates a distinct increase in mean PSI score with age. With the exception of the 5-1/2 year olds (which may be attributed to the small N in the fall) the mean score of each age group was substantially higher in the spring than the fall. This was also true for the figures obtained for the two sexes and the total sample.

Fall-Spring Change Analyses

Reliability. Because the analysis of program effects is based upon two different samples (a six-site sample for the comparison of Home Start and control groups and a four-site sample for the Home Start-Head Start comparison), the test-retest and internal consistency reliabilities have been calculated separately for each sample and for the total sample (see Table IV-12). The fall-spring, or test-retest, reliability was good for each of the samples (around .7), but the internal consistency reliability (alpha) was slightly lower for the six-site control sample than for the Home Start and Head Start samples. The reliability of the difference score (based on the total sample) was .42 according to Lord's (1963) formula for unequal variances.

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[1] Due to low item-total correlations, Item 1, 22, and 23 were deleted before calculating the scores for this analysis.

[2] One child excluded because he had no correct responses.

Average growth from fall to spring. The means and standard deviations of the fall and spring testing and of the difference scores are presented in Table IV-13. Again, these data are tabulated by sample--the four- and six-site Home Start samples, the six-site control sample and the four-site Head Start sample. In all four cases the t ratio for correlated means was significant, indicating reliable change from fall to spring in the mean PSI score. For each of the samples the standard deviation of the mean also increased slightly from fall to spring.

Stability and change in item responses. Tables IV-14 and IV-15 present the percent passing each PSI item in the fall and spring for the six and four-site samples. The items are listed in decreasing order of gain in percent passing of the Home Start group. The rank of each item (1 = greatest gain) is also given to facilitate comparisons between Home Start and control or Home Start and Head Start. The significance of the gain for each item was tested by comparing the proportion of children answering the item correctly in the fall with the spring proportion, using the chi square test for correlated proportions.

The data in Table IV-14 show that in the six-site sample Home Start children gained significantly on 25 of the 32 items (78%); control children gained on 13 items (41%) and showed a loss in the proportion passing on one item. In the four-site analysis (Table IV-15), the smaller Home Start sample, representing children from sites which also had Head Start, showed significant increases on 27 (84%) of the items; for the Head Start children, there were only 18 items (56%) on which there was significant fall-to-spring gain in percent passing.

Factor analysis of item change. Since the PSI consists essentially of pass-fail items, change in an individual's item response from fall to spring could be coded as follows:

2 = item answered correctly both times;

1 = item answered wrong in the fall but correctly in the spring;

0 = item answered wrong both in the fall and in the spring;

1 = item answered correctly in the fall, but wrong in the spring.

These item change codes were factor analyzed for all children who had no missing data (N = 315). A principal components analysis was done, using unities in the diagonal. With 32 items on the PSI, the trace was 32. Fifty seven percent of the trace was extracted by 11 roots. The loading of each of the 32 items on the 11 factors is given in Table IV-16. In the following discussion the items loading in each factor are discussed in terms of the gains in percent passing (as presented in Tables IV-14 and IV-15).

The common element of the four items loading highest on Factor I is knowledge of color. Both of the Home Start samples as well as the Head Start sample showed significant increases on each of these four items. In the control sample, significant increases in proportion passing the item were found on only two of the items.

The two items loading highest on Factor II represent knowledge of shape. Both Home Start samples and the Head Start sample showed significant increases on these two items. For the control children, a significant increase was found for triangle, while a decrease was found for square.

An interpretation of Factor III is difficult because of the loadings of opposite sign for two of the items, point to first checker and group with less checkers. Drawing a triangle and drawing a square also loaded highest on this factor. The proportion passing the two checkers items changed very little within each sample, but significant increases were observed on the two drawing items for each of the four comparison samples.

The three items loading highest on Factor IV each require knowledge of body parts. Significant increases in proportion passing each item were found for each of the four samples.

The three items loading highest on Factor V involve the concept of number. The two Home Start samples showed significant increases in proportion passing the two items requiring a number response. All four groups showed a slight decrease in proportion passing the item requiring the discrimination of equality of number. The decrease was significant for the control children.

Only one item loaded highest on Factor VI. This item required the child to carry out a complicated instruction putting two cars behind box in middle. This item was an extremely difficult one both in the fall and in the spring. The increase in proportion passing was small for each of the four samples (although the increase was significant for the sample of four Home Start sites).

Three items loaded highest on Factor VII, representing a variety of knowledge: comparative speed, breakfast time, and number. The two Home Start samples showed significant increases in proportion passing on all three of these items. For the control sample and the Head Start sample, a significant increase was found only for the breakfast item.

The two items loading highest on Factor VIII represent knowledge of position ("second" and "last"). "Middle" also had a loading of .32 on this factor. The four-site Home Start sample and the Head Start sample increased significantly on "last," while only the two Home Start samples increased significantly on "second." All four samples increased significantly on "middle."

The two items loading highest on Factor IX were first name and wheels on a car, but the loadings were of opposite sign. Nearly all children passed the first name item both in the fall and in the spring. All four samples increased significantly on knowing how many wheels there are on a car.

Three items loaded highest on Factor X ("Which way does a phonograph record go?", "Who would you go to when sick?", and "Where would you find a lion?"). These items represent a broadening of experience within and outside the home. The two Home Start samples increased significantly on each of these three items. The control sample increased slightly on "lion" and decreased on the phonograph record item. The Head Start sample increased significantly on the record and lion items.

Two items loaded highest on Factor XI "Point to the one most like a tent," and "Which way does a ferris wheel go?" Only the two Home Start samples increased significantly on the ferris wheel item. The control group decreased on that item, while the Head Start group increased. The Head Start group showed a decrease on the tent item.

Spring 1974 Analyses--Siblings

The PSI was administered to 56 siblings between the ages of 3 and 6 1/2. Of these 56, 36 were siblings of Home Start children and 27 of control group children. Siblings in Head Start families were not tested because testing was done in the Head Start center. Since there were no control siblings in either Arkansas or Ohio, these sites were eliminated from the analyses. Consequently, nine Home Start siblings were also eliminated. Of the remaining 47 siblings, ten did not have complete PSI tests (at least 28 items scored). Therefore, the following analyses are based on a sample of 37 siblings (21 Home Start and 16 control) from four sites. Analyses based on age are not reported in this section due to the small number of cases in each age group.

Response distribution. The percent of children who responded in each scoring category for each item is presented in Table IV-17. The greatest percent of responses was in the W category, followed closely by C then DK, NR and R. This pattern and the mean percent figures are very similar to those obtained for the sample of focal children. The pattern is also the same as that derived from last fall's data although the percent responding correctly has increased while all other categories decreased.

When comparing the two groups of siblings, the Home Start group generally had slightly smaller percents correct and slightly greater percents in all of the other categories. Unlike the focal children, the two groups were not very similar in verbal scores, either on items that required verbalization or on those that did not. There were nine items on which there was at least a ten-point difference between the groups. Home Start was higher on seven of these items and had a total verbal score of 17.9 while the control group was higher on two and had a verbal score of 16.7. However, as found with the focal children, these scores were negatively correlated with the total and therefore were not analyzed further.

Percent passing. The percent of children passing each item is presented by group in Table IV-18. The range of the two groups was fairly similar, 0.0% to 81.0% for Home Start and 6.3% to 93.8% for the control group, and both were similar to the fall ranges. However, in contrast to the fall when the control group had a higher percent passing than Home Start on every item, this spring each group excelled on exactly one-half of the items.

The items which produced the greatest difference between the two groups (greater than 15 percentage points) were items 3, 8, 13, 14, 22, 23 and 32. There were four items which proved the most difficult for both groups--7, 10, 17 and 24. As with the focal children, among the easiest items for both groups were 1 and 25.

Correlations. An intercorrelation matrix of the 32 PSI items and the item-total correlations (corrected for overlap) were computed for the total sibling sample. The interitem and item-total correlations were generally higher than those found in the analyses of focal children as well as the figures obtained last fall. The median squared multiple correlation between each item and the rest of the items was .901. There were seven items which correlated less than .20 with the total (items 14, 17, 18, 22, 23, 24 and 25). The three items with the highest item-total correlations were items 5, 6 and 19.

Factor analyses. As with the focal child sample, 11 factors with eigenvalues greater than .10 were extracted in the principal components factor analysis with varimax rotation (one less than fall). These factors accounted for 78.8% of the total variance, over 20% more than accounted for in the factor analyses of the focal child PSI items, and a few points higher than last fall (75.9%). The Kaiser statistic was .996, indicating that in spite of the smaller N for this analysis an adequate sampling exists. This is due to the high level of the interitem correlations.

Reliability. The total PSI score was computed and the internal consistency reliability of the resulting scale calculated. The alpha of .86 was slightly higher than the .84 found for the fall sample.

Whole score descriptive data. The means, standard deviations and standard errors of the means for the total sibling sample and the two groups are presented in Table IV-19 below. As in the focal child analyses, items 1, 22 and 23 (due to their low item-total correlations) were eliminated before calculating the scores for this analysis. The Home Start mean was 3.1 points higher than last fall and the control group 1.8; the total mean was 2.4 points higher than last fall.

Table IV-19

Sibling PSI Scores

Group	N	Mean	SE	SE	Mean Age in Months
Home Start	21	12.6	6.0	1.30	61.5
Control Group	16	12.7	7.1	1.78	59.4
Total Sample	37	12.6	6.4	1.05	60.7

Summary

The item analysis from this spring's administration of the PSI continued to demonstrate good test reliability and percent passing figures that increase with age. The percent passing each item as well as the whole scores are higher than the figures obtained last fall which can be explained, in part, by the seven-month increase in the mean age of the current sample.

Analysis of Home Start and control group sibling data indicated response patterns much like those of the focal children despite the fact that the siblings were on the average, six months older than the focal children. The two groups within the sibling sample proved to be quite similar in percent passing each item and almost identical in their whole scores. As with the focal sample, the spring figures showed an increase from last fall.

In both the focal child and sibling samples, group differences were apparent in terms of verbal scores. However, upon examination it was found that these scores correlated negatively with the PSI total score. This is because on items which don't require verbalization, children tended to talk more when they didn't know the correct response. Therefore, it was decided to discontinue the scoring of these data.

The fall-spring psychometric analyses found test-retest reliabilities around .7; the alpha coefficients were somewhat lower. In all of the six- and four-site samples, the t ratio for correlated means was significant, indicating reliable change from fall to spring in the mean PSI score. For each of the samples the standard deviation also increased slightly. The analysis of item change indicated significant positive change on 25 of the 32 PSI items for the six-site sample Home Start group, 13 items for the control group, 27 items for the four-site Home Start sample and 18 items for the Head Start group. A factor analysis of item change revealed six separate PSI factors which might be labeled color, shape body parts, number, breadth of experience, and seriation.

Denver Developmental Screening Test (DDST)

The DDST was designed to aid in the early discovery of developmental problems in four areas: Fine Motor Adaptive, Language, Gross Motor, and Personal-Social. It was primarily intended to be used as a diagnostic screening procedure with individual children to identify those who are developmentally delayed.

Since the DDST included items that were applicable for children who ranged in age from two weeks to six years, items suitable for the Home Start age range had to be selected. This was done by examining the norms published in the DDST Manual and selecting items that would discriminate among children in the 3- to 6-year-old range. For the fall 1972 and spring 1973 pilot testing, 32 items were selected that ranged in difficulty, according to the norms, from those that 90% of the 3-year-olds passed to those that no child in this age group would be expected to pass. A few DDST items falling in this range were not included since they duplicated PSI items. Three items found to be deficient in the 1972-73 pilot data collections were deleted in an attempt to make the instrument more stable and more sensitive to age changes. In addition, revisions were made in a few items, instructions to community interviewers in the test booklet were clarified, and the order of administering the subscales was revised so that Fine Motor items were administered first. Experience of the test's authors suggested that rapport with children in this age group might be better established if these items were given first.[1] As administered for this evaluation, answers to the Personal-Social scale items were provided by the mother. The other three scales were administered directly to the children. The test was not designed to yield scale scores, but for the purposes of the Home Start evaluation, scale scores were obtained by adding together items within each of the four separate areas of functioning.

Spring 1974 Analyses

Completed DDSTs were available on all 434 children in the spring sample. Since each of the four DDST subtests was analyzed separately, a different criterion defining a valid test administration was developed for each of the four scales. Each criterion was designed to retain the maximum number of subjects for the evaluation, while removing cases with a significant amount of missing data. The Fine Motor Adaptive scale contained seven items, one of which had two responses scored. To be included in the evaluation, children must have received a score for all eight responses. A total of 416 of the 434 children (95.9%) met this criterion and were included in the analysis. To be included in the analysis of the Language scale children needed a valid score on all 18 Language scale items. A total of 412 children (94.9%) met this criterion. The Gross Motor scale contained seven items, one of which has three responses scored. To be a valid administration, all nine responses must have scored. A total of 387 children (89.2%) met this criterion. The Personal-Social scale contained seven items, two of which were combined into one score. To be included in the analysis, a child must have received a valid score on all six items. This criterion was met by 416 children (95.9%).

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[1] Throughout the development of the DDST format used in the Home Start evaluation, Dr. William Frankenburg and Mrs. Alma Fandel have been extremely cooperative in helping to adapt their instrument.

In applying the criteria for valid scale scores, it was possible for a child to be excluded from one or more scales and still be included in other DDST scales. Thus, the Ns are the same for all scales. It is important to note, however, that there appeared to be no systematic differences in the proportion of Home Start, control and Head Start children excluded from each scale.

Response distributions. The DDST item key is presented in Table IV-20. The first list of item numbers is associated with the item as it appeared in the test booklet. For some tables in the report the items are numbered consecutively. These numbers are given in the second column, opposite the test booklet item they correspond to.[1] When items are referred to in the text of the report, they always refer to the order of presentation employed in the test booklet, unless specified otherwise.

The distribution of responses for each item is presented in Table IV-21. The child's responses on items 1-20 were scored in five categories--correct (C), wrong (W), refusal (R), don't know (DK), and no response (NR). Scoring items requiring multiple responses (items 1, 3, 8, 14, 18, 19 and 20) by children necessitated the combination of the R, DK and NR categories. These combined category scores are reported in the "Sum" column of the table. Items 21-27 were scored yes or no.

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[1] Originally, the Language scale contained six items with multiple subsections. During the fall 1973 data analysis, it was discovered that by treating each subsection of an item as a separate Language scale item, the reliability of the scale could be increased. Therefore, a decision was made to treat each subsection as a separate item in all analyses.

The mean of the item difficulties (percent passing) for each of the four DDST scales is reported in Table IV-22 below, along with the fall 1973 results.

Table IV-22

DDST-Mean Percent Passing

Scale	Spring 1974	Fall[1] 1973
Fine Motor	66.6	42.2
Language	66.4	45.1
Gross Motor	52.7	43.2
Personal-Social	82.8	77.7
Mean Age in Months	54	47

The relatively high percent passing on all items of the Personal-Social scale should be noted. For the spring 1974 analysis, the mean item difficulty was 82.8% and the range of the six items was from 78.1 to 99.0%. One requirement of a good pychometric instrument is to have items with percents passing clustered as closely as possible to .5. When the percents on a scale deviate from .5, the utility of the scale is impaired in two ways. First, the sensitivity of the instrument to the individual differences is decreased, resulting in a clustering of children within a smaller range on the scale. This limits the potential to discovering treatment differences. The restriction in the range of test performance also limits any attempt to correlate P-S scale scores with other behavioral measures. Since extreme percents passing also restrict item intercorrelations, the scale reliability is depressed. This is especially true when the number of items in a scale is relatively small, as in the case of the P-S scale. It might be expected, therefore, that the DDST Personal-Social scale can not yield useful scores for the evaluation of program effects.

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[1] All 556 children from the fall 1973 report are included.

Percent passing. An examination of the percent passing by age group gives a picture of the developmental nature of the items. These data are presented in Table IV-23. For the most part, items showed an increased percent passing with increasing age. The item percents passing by group are presented in Table IV-24.

Correlations. Certain items have been rescored to avoid the problem of non-independent items for the intercorrelation analysis, factor analysis, whole score descriptive data, and computation of coefficient alpha. Item 7 (draw a girl or boy), which was scored twice depending on the number of body parts drawn, and item 14 (balances on one foot), which was scored three times depending on the length of time that the child remains balanced, have been converted to single-item continuous variables. These replaced the two scores for item 7 and the three scores for item 14 in subsequent analyses. The item intercorrelation matrix and the item-scale correlations are presented in Table IV-25. The item-subtotal correlations reported in the correlation matrix have been corrected for overlap.

An examination of the correlation matrix reveals item homogeneity on three of the four DDST scales. Item-subtotal correlations on the Fine Motor scale ranged from .22 to .62, items on the Language scale ranged from .18 to .60, and items on the Gross Motor scale ranged from .13 to .42. The Personal-Social scale lacked homogeneity. Three of the six items on the Personal-Social scale did not correlate well with either the scale subtotal or the other items on the scale. Items 33, 34 and 35 correlated .09, .04, and .12 with the P-S subtotal. Intra-scale item correlations for the three items ranged from -.06 to .13 with the median correlation .03. This finding severely limits the utility of the Personal-Social scale as an evaluation instrument. This conclusion is consistent with the fall 1973 data analysis of the DDST.

Note should be taken of the interrelationship of the four DDST subscales (see Table IV-26). There was a high relationship between the Fine Motor, Gross Motor, and Language scales. The DDST instructions were presented verbally by the interviewer so skill with language was a prerequisite for good performance on the Fine Motor and Gross Motor subscales. The high correlation of the Fine Motor with Gross Motor indicates that the items on each scale are tapping overlapping motoric components.

Table IV-26

Interrelationship of the Four DDST Subscales

	Fine Motor	Language	Gross Motor
Language	.57		
Gross Motor	.47	.59	
Personal-Social	.22	.23	.24

Factor analyses. The factor analysis conducted on the DDST extracting all roots with eigenvalues greater than 1.0 resulted in 12 factors accounting for 58.3% of the total variance. This contrasts with last fall's analysis in which nine factors were extracted accounting for 50.7% of the variance. The Kaiser statistic was .60, considerably lower than the .80 to .90 Kaiser recommends in order to have good factor analytic data. However, the Kaiser value is reasonable when considered in light of the median squared multiple correlation of .28.

In an attempt to evaluate the homogeneity of the four DDST scales, four roots were rotated using the varimax method. These four factors accounted for only 33.5% of the total variance. The factor loadings for each item are presented in Table IV-27 and the items loading highest on each factor are presented in Table IV-28. Factor I which accounted for 13.6% of the variance and contained 17 of the 18 items on the Language scale and items 3, 6, and 7 from the Fine Motor scale. Factor II which accounted for 6.7% of the variance had items 1, 2, 4, 5 and 6 from the Fine Motor scale; item 12 (comprehends prepositions "on") from the Language scale and three items from the Personal-Social scale. Factor III which accounted for 7.0% of the variance contained items 6 and 7 from the Fine Motor scale, and in the opposite direction, items 23, 24 and 25 from the Language scale and items 26, 29, 30, 31 and 32 from the Gross Motor scale. Note that items 23, 24 and 25 are all sections of the test booklet item 13 (composition of ____) indicating that the item is tapping a specific factor in addition to the general Language factor. Factor IV accounting for

6.2% of the variance contained items 16-19 from the Language scale, and items 35, 37 and 38 from the Personal-Social scale. Note that items 16-19 are all sections of test booklet item 11 (recognizes colors) indicating that item 11 was also tapping a specific factor in addition to a general language factor.

The loading of 17 of the 18 Language scale items on one factor provided strong support for the quality of the DDST Language scale. Five of the seven items from the Fine Motor scale loaded together on Factor II indicating satisfactory homogeneity was also present on the Fine Motor scale. Five of the seven items on the Gross Motor scale negatively loaded on Factor III indicating that the Gross Motor scale was also a relatively pure scale. As for the Personal-Social scale, of the six items, three loaded on Factor III, two on Factor IV and one item did not load on any factor. The lack of homogeneity on the Personal-Social scale provided additional evidence of its inadequacy for evaluation.

The factor analytic findings obtained from the spring 1974 analysis differ from those obtained in the fall 1973 analysis. In the fall the items on the Fine Motor and Gross Motor scales loaded together on one factor. This spring the items on each scale loaded on two different factors. The Language Scale loadings also differed in the fall, most of the items on the Language scale loaded on two factors; in the spring, most of the items loaded on one factor. As for the Personal-Social scale, in the fall five of the six items loaded together on a single factor, while in the spring no one factor contained more than three items. The differences between the two factor analyses can probably be attributed to change in the composition of the sample and change in the subjects over time.

Reliability. The alpha coefficients of each scale have been calculated to determine the internal consistency of the items (see Table IV-29). Continuous, transformed variables were used to remove the dependencies in item 7 and item 14 before alphas were calculated.

Table IV-29

Spring 1974 and Fall 1973
Coefficient Alpha by Scale

Scale	Spring 1974 Alpha	Fall 1973 Alpha
Fine Motor Adaptive	.65	.71
Language	.85	.84
Gross Motor	.58	.65
Personal-Social	.40	.51

The reliabilities for the spring 1974 data analysis remained comparable to those of the fall 1973 analysis. The Language scale remained the most accurate subscale on the DDST, and the Fine Motor and Gross Motor scales remained in the acceptable range. On the other hand, the reliability of the Personal-Social scale was unacceptable. In view of the item-scale and interitem correlations and alpha coefficient of .40, the Personal-Social scale can not be considered an acceptable measure of group differences in the overall Home Start evaluation.

Whole score descriptive data. The mean scale scores, standard deviations, and the standard errors of each treatment group are presented in Table IV-30. The mean scale scores, standard deviations, and the standard errors for the total sample are presented by age and sex in Table IV-31. The mean scale scores on all four DDST subtests followed a developmental trend with performance increasing with age. There appeared to be no sex differences.

Fall-Spring Change Analyses

Reliability. Because the analysis of program effects is based on two different samples (a six-site sample for the comparison of Home Start and control groups and a four-site sample for the Home Start-Head Start comparison), the test-retest and internal consistency reliabilities have also been calculated for those samples as well as for the total sample (see Table IV-12). The fall-spring or test-retest, reliability of the Fine Motor scale was slightly higher for the Home Start samples (range = .71 - .74) than for the Head Start (.60) or control samples (.68). The internal consistency reliability of the items (alpha coefficient) followed the same pattern. The reliability of the difference score (based on the total sample) was .04 according to Lord's (1963) formula for unequal variances. The fall-spring test-retest reliability of the Language scale ranged from .74 to .80, but the alpha coefficients of all four samples were somewhat higher (range = .80 - .87). The reliability of the difference score for the total sample was .30. The test-retest reliability of the Gross Motor scale ranged from .53 to .58 for Home Start and control groups, but somewhat lower for the Head Start sample. The reliability of the difference score for the total sample was .05. Unlike the other three DDST scales, the test-retest reliability of the Personal-Social scale was very poor, with the total sample at .34 and the four subgroups ranging from .18 to .45. The alpha coefficient was .49 in the fall and .42 in the spring.

Average growth from fall to spring. The means and standard deviations of the fall and spring testing and of the difference scores for all four scales are presented in Table IV-32. Again, these data are tabulated by sample--the four- and six-site Home Start samples, the six-site control sample and the four-site Head Start sample. In all cases the t ratio for correlated means was significant, indicating reliable change from fall to spring in the mean scores on all four scales.

Stability and change in item responses. Tables IV-33 and IV-34 present the percent passing each DDST item in the fall and spring for the six- and four-site samples. The items are listed in decreasing order of gain in percent passing of the Home Start group. The rank of each item (1=greatest gain) is also given to facilitate comparisons between Home Start and control or Home Start and Head Start. The significance of the gain for each item was tested by comparing the proportion of children answering the item correctly in the fall with the spring proportion, using the chi square test for correlated proportions.

The data in Table IV-33 show that in the six-site sample Home Start children gained significantly on 33 of the 38 items (87%). On the Fine Motor scale, significant increase was found on 100% of the items. On the Language scale, 16 of the 18 items, or 89%, showed significant increase in the total Home Start sample. The two items not showing significant change were two of the preposition items. For "under" there was a very slight increase; for "on" there was a very slight decrease. On the Gross Motor scale, five of the seven items, or 71%, showed significant increase. The mean increase on the two jumping items were not significant. On the Personal-Social scale, five of the six items, or 83%, showed significant increase. The item not showing a significant increase dealt with the child's getting upset when mother went away.

Control children gained on 29 items (76%). On the Fine Motor scale, six of the seven items, or 86%, showed a significant increase. The average increase on building a tower was not significant. On the Language scale, 15 of the 18 items, or 83%, showed significant increase. The three items for which the average increase was not significant were big/small, "behind" and plurals. On the Gross Motor scale, six of the seven items, or 86%, showed a significant increase. There was a very slight decrease on jumping in place. On the Personal-Social scale, only two of the six items, or 33%, showed a significant increase. A very slight decrease was found on the mother goes away item.

In the four-site analysis (Table IV-34), the smaller Home Start sample, representing children from sites which also had Head Start, showed significant increases on 26 (68%) of the items. On Fine Motor, six of the seven items, or 86%, showed a significant increase. The average increase on building a tower was not significant. On Language, 14 of the 18 items, or 78%, showed a significant increase. The average increase on plurals, "in front of" and "under" were not significant. "On" showed essentially no change in item mean. On Gross Motor, five of the seven items, or 71%, showed a significant increase. The average increases on the two jumping items were not significant. On Personal-Social, significant increases were observed on only the two dressing items of the six items, or 33%. The item referring to child's feelings when mother goes away showed a very slight decrease.

Head Start children also showed significant fall-spring gain on 26 items (68%) although not the same ones. On Fine Motor, significant increase was observed on 100% of the items. On the Language scale, 13 of the 18 items, or 72%, showed significant increase. No significant increase was found on two of the color items nor on three of the preposition items.

On Gross Motor, only three of the seven items, or 43%, showed significant increases. These were catching a bounced ball, the forward heel-to-toe walk, and hopping on one foot. On Personal-Social, three of the six items, or 50%, showed significant increases; these were the two "dresses self" items and the buttoning item. An average decrease was observed on the item pertaining to the child's feelings when mother goes away.

Factor analysis of item change. Because of several interdependencies among DDST items, it was necessary to score the DDST scales as if they were rating scales rather than pass/fail items. For all items, a value of "1" indicated a wrong response. Correct responses could take on values of 2, 3, or 4, although 2 was the most frequent upper limit to the correct response. A person's score on a scale was the sum of his responses. Thus, instead of a score of zero indicating all items wrong, a totally wrong performance would be represented by a score equal to the number of items on the scale.

The coding of item changes for a rating scale is very simple. The value for an item is merely the difference between the spring response and the fall response. No distinction is made between a zero difference representing wrong response in both fall and spring or a correct response in both fall and spring. These simple differences between item responses from fall and spring were factor analyzed for the entire sample having no missing data (N=285), using a principal components solution with unities in the diagonals. Sixty-one percent of the total variance was extracted by 16 roots. The item loadings on these 16 factors are found in Table IV-35. In the following discussion, the items loading on each factor are discussed in terms of the gains in percent passing (as presented in Tables IV-33 and IV-34).

The four color items loaded highest on factor I. The only instance where a non-significant increase in item mean was found occurred for "red" in the Head Start sample. Every other mean increase for each sample was significant.

The three items loading highest on factor II were the "made of" items. Except for the insignificant average increase for the Head Start sample on what a spoon is made of, all average increases on all items for this factor in all samples were significant.

Three items loaded highest on factor III. Positive loadings were found for draw a line and hop on one foot, while a negative loading was found for draw a child. The average increase for each sample on each of these three items was significant.

Two items loaded highest on factor IV, both involving opposites: hot/cold and big/small. The only insignificant average increase on these two items occurred for the control sample on big/small.

The two items loading highest on factor V were buttons buttons and understands the preposition "on." A significant average increase was found for each of the four samples on the buttons item. The control sample showed a significant increase on "on," but the two Home Start samples and the Head Start sample each showed a slight decrease in mean performance on this item.

The two items loading highest on factor VI were dresses self and puts on underpants. These two loadings were of opposite sign. Nearly all the children could put on their own underpants both in the fall and in the spring. The average increase on this item was significant only for the total Home Start sample. All four samples showed significant increase on dressing by self, unaided.

Three items loaded highest on factor VII: plurals, standing on one foot, and telling front of clothes from back. The clothes item loaded oppositely in sign from the other two. The total Home Start sample showed significant average increases on each of these items. The average increase on plurals was not significant for the smaller Home Start sample, but the average increases on the other two items were. For the Head Start sample, only the clothes item showed a significant increase, while, for the control sample, only standing on one foot showed a significant increase.

Three items loaded highest on factor VIII: forward heel-to-toe walk, backward heel-to-toe walk, and catching bounced ball. All three of these items are from the Gross Motor scale. The only average increase that was not significant was for the Head Start sample on the backward heel-to-toe walk. All other average increases for all other samples were significant.

Only two items loaded highest on factor IX: building a bridge and understanding "behind." Each of the four samples significantly increased on each of these items.

Only two items loaded highest on factor X: not being upset when mother away and jumping in place. Nearly every child passed these two items both in the fall and in the spring. The average change on these two items was nearly zero for each sample. For the total Home Start sample, the average change on each item represented an increase. For the control sample, the average change on each item represented a decrease. For the smaller Home Start sample and for the Head Start sample a slight average decrease was found on the mother away item, but a slight average increase was found on the jumps in place item.

Two of the Fine Motor items loaded highest on factor XI: copy a cross and copy a circle. The average increase for each sample on each of these two items was significant.

The two items which loaded highest on factor XII were jumping over paper and pointing to longer line. Only the control sample increased significantly on jumping over paper, but all four samples showed a significant increase on pointing to the longer line.

Two of the preposition items loaded highest on factor XIII: "under" and "in front of." Only the control sample showed a significant average increase on "under." The smaller Home Start sample was the only one of the four not to achieve a significant average increase on "in front of."

The two items loading highest on factor XIV were building a tower and playing games with others. A larger proportion of the children passed these items both in the fall and in the spring. The average increase on each item was significant for the total Home Start sample, while the Head Start sample increased significantly only on building a tower. None of the other increases were significant.

The only item to load highest on factor XV was "hungry." All four samples showed a significant average increase on understanding this concept.

Only one item, woman/man, loaded highest on factor XVI. The average increase for each sample was significant on this item.

Summary

The level of item difficulty on three of the four DDST scales was satisfactory, but the ease in passing the Personal-Social items limits that scale's sensitivity to individual differences and lowers the internal consistency of the scale. The percent of children passing by age demonstrated the developmental nature of each of the scales. Item intercorrelations provided evidence of the homogeneity of three of the four scales, and as in the fall, pointed up the limitation of the Personal-Social scale which had low item-scale and low interitem correlations. Factor analyses provided support for the quality of the Fine Motor, Language, and Gross Motor scales, but confirmed that the Personal-Social scale lacked homogeneity. The alpha coefficients obtained in the spring analysis remained comparable to those of the fall except for the Personal-Social scale, which dropped to an unacceptable level. All of the evidence available suggests that the Personal-Social scale can not be used as an evaluation instrument.

In the fall-spring change analysis, the reliabilities of the four-site and six-site samples were found to be similar to the total sample reliabilities. For all four scales the change in mean score from fall to spring was also found to be reliable, according to t tests for correlated means. Analyses of fall-spring item gains found reliable gains on 33 of the 38 items for the six-site Home Start group, 29 items in the control group, and 26 items for both the four-site Home Start group and the Head Start group. The factor analysis of item change uncovered six cohesive factors which might be called color, object composition, opposites, gross motor skills, fine motor skills and prepositions.

8-Block Child Task Score

The 8-Block Task is administered primarily to assess mother-child interactions in a teaching context. After the mother is shown how to sort a set of blocks, she is asked to teach her child and then the child is asked to place two additional blocks where they belong and to explain the placement. The child's performance on the last part of the task is reported here since it is a child performance measure. The analysis of the mother-child interaction variable, along with a more complete explanation of the 8-Block Task, is reported in the section of this report on parent measures.

When asked to place each of the two blocks (a short block with an O on it and a tall block with an X on it) in the proper quadrant on the board and to explain his placement, the child's responses were scored as follows: for placing the block in the correct group, the child received 2 points; if the block matched the group on only one dimension, the child received 1 point; if the block placement was completely wrong, the children received no points. For the explanations, the child received a score of 2 if he explained his placement in terms of both dimensions, a score of 1 if his explanation referred to only one dimension, and a score of 0 for a completely incorrect explanation.

Response distribution. Tables IV-36 and IV-37 present the percent responses by age for placement and explanation of the short O block. Tables IV-38 and IV-39 present similar data for the tall X block. Note that the percent correct for each placement and the ability of children to explain both dimensions correctly increases with age. This is indicative of the developmental nature of the 8-Block Task.

Whole score descriptive data. Table IV-40 presents means and standard deviations for the total sample, by age and by sex. A scale score was calculated for a child only if he had two valid placement responses and two valid explanations. Total 8-Block child task scores increased consistently across all age groups as children got older (from 2.8 at 3-1/2 years to 5.4 at age 5-1/2 years). The mean 8-Block score for the total sample was 4.1. There were minimal differences between the average total scores for boys and for girls.

Comparison among groups for all children tested this spring showed the following scores for explanation, placement and 8-Block total:

Table IV-41

8-Block Means by Group

	Home Start (N=000)		Control Group (N=000)		Head Start (N=000)		Total Sample (N=000)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Explanation (0-4)	1.17	1.48	.82	1.19	1.10	1.34	1.05	1.37
Placement (0-4)	3.15	.93	2.85	1.00	3.21	.86	3.08	.94
8-Block Total (0-8)	4.32	2.10	3.68	1.85	4.31	1.93	4.13	2.00

Summary. The 8-Block Task proved to be very sensitive to the developmental characteristics of children in the project age range. While success on the placement task rapidly increased with age, the process of correctly explaining a placement in terms of both relevant dimensions proved to be much more difficult. As a result, the explanation score provides a better index for discriminating the level of children's development. Children in the project age range who are capable of explaining both dimensions correctly would be expected to have relatively advanced cognitive development.

Child Food Intake Questionnaire

The Child Food Intake Questionnaire was developed to obtain a quantitative and qualitative index of food consumption. It utilizes a system of 24-hour recall whereby mothers are asked to report all foods eaten by their child on the preceding day. Specifically, the mother was asked what the focal child ate for breakfast, lunch and dinner, and any snacks in between. The interviewer probed for exact quantities of all foods. To help the mother estimate quantities of food more accurately and to help the tester reliably record the mother's responses, the tester used plastic, child-size beef patties (2 ounces), glasses (4 ounces and 8 ounces) and bowls (10 ounces) marked at one-fourth cup intervals, and tablespoons. The testers were instructed not to suggest "appropriate" amounts of food; rather the mother was asked to point to markings on the glasses and bowls that indicated how much of a certain food the child had eaten. The tester mentioned particular foods only when probing for possible additions which might have been forgotten (such as milk on dry cereal or lettuce on sandwiches). In addition, the mother was asked whether the child took vitamins.

The data in this section are presented somewhat differently than the data in other sections of this chapter. For almost all group comparisons the Home Start and control children are presented as a single group, and the Head Start children are presented separately. This decision was made because of the outcome results for spring 1974, presented in Chapter VI, which showed essentially no difference between the two Home Start groups and the control group. Since the groups were also similar in the fall, it was felt that the larger group size created by combining the Home Start and control children would yield more accurate means and proportions for use in discussing various aspects of the observed nutritional deficiencies.

Scoring procedures. The questionnaires were coded according to two sets of criteria. The first was based on the total number of "servings" eaten in each of seven food groups (milk, meat, eggs, vitamin-A vegetables, citrus fruits & vitamin C vegetables, other vegetables, and breads & cereals). A total food score was then derived by summing the number of servings across food groups. Quantities used in defining servings are listed in the coding instructions in Appendix C of Interim Report IV.

The second set of criteria provided qualitative information by setting a maximum score for each of the seven food groups based on the nutritional requirements for that group. The maximum score was based on the recommended serving levels in the Daily Food Guide (United States Department of Agriculture and Health, Education & Welfare). An ideal dietary score of 12.5 was obtained for children between ages three to six as follows:

Food Groups	Servings[1]
Milk	2.5
Meat	1.4
Eggs	.6
Vitamin A-rich vegetables	.6
Vitamin C-rich fruits	1.0
Other fruits & vegetables	2.4
Breads & cereals	4.0
TOTAL:	12.5

If the number of servings eaten exceeded the maximum food score for a particular food group the maximum food score was recorded. When computing the dietary score, substitutions from one group to another were permitted for two categories: (1) if the child had more than the recommended level for milk the excess could, if needed, be added to the meat score; (2) if there were excess servings of vitamin A-rich vegetables or of vitamin C-rich fruits the excess could be added to the other fruits & vegetables group. It was decided not to code foods of little nutritional content, such as potato chips, doughnuts, mayonnaise and the like, since analysis of caloric intake was not being conducted. These scoring procedures are essentially the same as those used in the fall.

The dietary score was further qualified descriptively as follows:

Dietary Score	Diet Quality
12.5	excellent
10 - 12.4	satisfactory
below 10	poor

The dietary score of 10 (having maximum scores for each group as follows: milk, 2.0; meat, 1.0; eggs, 0.4; vitamin A-rich vegetables, 0.4; vitamin C-rich fruits, 0.7; other fruits & vegetables, 2.0; breads & cereals, 3.5) was arbitrarily selected and assumed to minimally meet the recommended dietary allowances for children aged three to six. To test this assumption, the mean number of servings from each food group for the Home Start and control children with satisfactory diets (Table IV-42) were used to calculate nutrient content. Calculations were based on figures in USDA Handbook 8, Food Composition Table (1963). Results, presented in Table IV-43, show that the diet meets the Recommended Dietary Allowances (RDA) for protein, vitamin C, riboflavin and niacin. Iron, calcium and thiamin levels were marginal; vitamin A content was only approximately half of the RDA.

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[1] The methods for calculating the number of servings for each food group are given in Appendix C, Interim Report IV: Summative Evaluation Results (1974).

Table IV-42 also shows that assigning a maximum food score (above which additional servings are ignored) helps control distortion of group averages resulting from extreme intakes by a few children. If maximum food scores were not adopted these excesses would have qualified some diets as excellent by sheer quantity, even though some essential nutrients were not present. Good nutrition is concerned with both quality and quantity and excesses are as much a detriment to health as are inadequacies.

The 24-hour recall used in this study is one of the many techniques developed for collecting dietary information. These techniques range from estimations of food intake to more precise methods, such as actually weighing food. The most precise method involves laboratory nutrient analysis of a measured portion of food eaten over a period of time and is used in metabolic studies (Beckor, et al., 1960).

The adequacy of recorded diets may be determined by calculating dietary nutrient values using a food composition table. The nutrient values of the diet are then compared to the RDA. The RDA has been designed for the maintenance of good nutrition of children, pregnant and lactating women, and adults. It represents allowances above the minimum nutrient requirements and is utilized in diet planning. Calculating dietary nutrient values is time-consuming and requires technical training in nutrition.

A more expedient method of determining dietary adequacy makes use of the Daily Food Guide. Its use and the development of a dietary score as a quick method of evaluating diets has been reported in the literature. It is currently used by several clinical nutrition research programs in assessing diets of clinic patients. The method used in this study is similar to the one adapted by the nutrition program clinic at the Institute for the Study of Mental Retardation, and Related Disabilities, University of Michigan. It differs from the others in the scoring system established, but is essentially similar in concept. The method is simple enough to use in field settings, yet it was felt that qualitative assessments of dietary adequacy would give as good a picture of nutrient intake as quantitative calculations since enormous numbers of processed foods with constantly changing nutrient content are consumed by the American public. In addition, calculations of nutrient content utilizing food composition tables result in estimations rather than precise data, since data in these tables are subject to differences in seasons, regions, etc. and therefore represent averages rather than absolute values. A similar problem was encountered by Owen (1974) in his recent survey of the nutritional status of preschoolers. The method has been adapted for this study with the objective of determining qualitative dietary characteristics of groups of children and identifying inadequacies of intakes rather than precisely evaluating intakes of individuals; the method appears to provide very stable assessments of group means.

Descriptive data. The Child Food Intake Questionnaire was administered to 434 focal parents. It should be mentioned that mothers of Head Start children were sometimes unaware of what their children ate for lunch the previous day at the center. In such cases, the community interviewers were instructed to ask the Head Start teachers what a particular child had eaten the previous day for lunch. Teachers were very helpful in providing this information, but sometimes were not sure of exactly how much food the child had consumed. In these cases, the teachers were asked to give an approximate amount.

Results show consistency from fall to spring in each area analyzed; Table IV-44 presents means and standard deviations of total Food and Dietary Scores for spring 1974 and for the total fall 1973 sample. Quantitative Food Scores for the spring sample showed slightly higher means in four of the seven food groups than did the fall sample, perhaps because children were about seven months older in the spring. The largest differences were in meat and bread & cereals (about 1/2 serving each). In terms of total amount of food eaten the fall mean was about 1 1/2 servings less than this spring's. The differences in Dietary Scores are generally smaller than the Food Score differences. When Nutrition Scores were combined into scores for the four basic food groups (milk, meat and eggs, fruits & vegetables, breads & cereals), the results obtained this spring were quite comparable to those obtained last fall. The total Dietary Score was about 1/4 serving more this fall. Using 12.5 as the maximum Dietary Score based on RDAs, Home Start children received 64.2% of the recommended nutritive intake in the fall, and the three groups tested this spring obtained 66.2% of the recommended daily intake.

Food intake and dietary adequacy. A general picture of the adequacy of the children's diets in spring 1974, is given in Table IV-45. Meat intake almost met the recommended amount while bread & cereal and other fruit & vegetable intakes followed a close second and third. Milk intake was only about half of the recommended amount. The intakes of the other food groups were exceedingly low, especially for vitamin A-rich vegetables. The inadequacies in the food intake of these children reflect deficiencies in vitamins and minerals, particularly calcium, iron, riboflavin, and vitamins A and C. Protein requirement appears to be met since meat intake was almost adequate.

Except for intake of eggs, the food intake of the Head Start children was superior to that of the Home Start/control children. It appears that snacks and meals served to Head Start children at the centers have contributed greatly toward improving their diets. In some sites, breakfast was served in addition to snacks and lunch. The reason for the lower intake of eggs by Head Start children is not clear, but it is speculated that either eggs were not part of the breakfast served by the school to these children, or that the more rural Home Start/control families had more access to chickens than the predominately urban Head Start families did.

Table IV-46 gives the number and percentage of children eating poor, satisfactory, and excellent diets. The overall data show that more of the Head Start children had better diets than the Home Start/control children. Approximately 43% of the Head Start children and only 16% of the Home Start/control children's diets were rated satisfactory. A high number of children from both groups had poor diets.

Table IV-46

PERCENTAGE OF CHILDREN EATING POOR, SATISFACTORY, AND EXCELLENT DIETS, SPRING 1974

	Home Start/ control		Head Start	
	N	%	N	%
Excellent	1	0.3	0	0
Satisfactory	51	15.4	48	42.8
Poor	270	84.3	64	57.2
TOTAL	322		112	

Table IV-47 gives the percentage of children eating satisfactory diets for each food group. More Head Start than Home Start/control children had satisfactory scores for all food groups except in egg intake, where the number of Home Start/control children was 10 percentage points higher than Head Start.

Table IV-47

PERCENTAGE OF CHILDREN EATING SATISFACTORY DIETS
FOOD SCORES AND TOTAL DIETARY SCORE
N=434

	Recommended Food Score for Satisfactory Diet	Home Start/ control	Head Start
Milk	2.0	28%	55%
Meat	1.0	92	95
Egg	0.4	40	30
A-Vegetable	0.4	15	21
C-fruit	0.7	18	51
Other fruit/vegetable	2.0	60	83
Bread/cereal	3.5	65	67
Total Dietary Score	10.0	16	43

Summary. The Child Food Intake Questionnaire yielded similar results in both fall 1973 and spring 1974, although intake was generally found to be slightly higher in the spring in the various food categories. The differences in Total Dietary Scores were smaller than the differences in total amount of food eaten. The distribution of nutritional intake appeared similar in the two samples. These results suggest that the Food Intake Questionnaire is continuing to provide a relatively reliable system for obtaining information on children's nutritional intake. The analysis of dietary adequacy found that Head Start children in general had better diets than Home Start and control children, whose diets were seriously deficient in calcium, iron, riboflavin, and vitamins A and C.

Height and Weight

Information on the height and weight of children in the sample was collected to assess physical growth and to determine possible height and weight differences among groups. These are particularly important data since height, and to a lesser extent, weight are general indicators of physical growth and because large discrepancies from the norms may be related to nutritional status. Height and weight findings from the fall 1972 and spring 1973 Home Start samples indicated moderate to substantial correlations of both height and weight with some of the cognitive measures. This section of the report presents descriptive data from the total sample and compares the groups on these two variables.

Descriptive data. Table IV-48 presents means, standard deviations and standard errors for the total sample by age and by sex. Both height and weight for the total sample increased as children's ages increased. Boys were only slightly taller than girls (0.3 inch) and slightly heavier (0.8 pound). These differences are consistent with those found last fall although the total sample then averaged 1½ inches shorter and 2½ pounds lighter.

Table IV-49 (a-h) presents comparative data from the spring sample with height and weight norms established by the University of Iowa's Department of Pediatrics. Means, standard deviations and standard errors for the spring sample and for each group are shown by age for boys and for girls, with means for each plotted on the graphs. The means from the fall data are also plotted on the graphs.

Boys in this spring's sample were only slightly taller and heavier than last fall (except the 5½-year-old group, where the change is most likely due to the small N last fall). Consequently this sample with the exception of the weight of the 3½ year olds, is still below the norms at all age levels. Like last fall, the means tend to fall further away from the norms as age increases. When examining the data by group, it was found that the Home Start and control group boys consistently were below the norm except for height of the 3½ year olds while 3½- and 5-year-old Head Start boys were at the norm in weight and 3½ and 5½ year olds were above the norm in height.

Girls in the spring sample were, for the most part, shorter and lighter than the fall sample; with the exception of the height and weight of the 3½ year olds, the sample was consistently below the norm although unlike the boys, the difference did not generally increase with age. The Home Start girls, while generally heavier and taller than last fall's sample, were only above the norm at 3½ years of age. The control group, with means generally lower than last fall, was below the norm except in the weight of 3½ year olds. Head Start was close to the norm (either below or above) in the height and weight of 3½-, 4- and 4½-year-old girls.

Comparisons among groups. Means, standard deviations and standard errors for height and weight for each group and the total sample are as follows:

Table IV-50

WEIGHT AND HEIGHT BY GROUP

		Weight			Height		
Group	N	Mean	SD	SE	Mean	SD	SE
Home Start	192	36.8	5.63	.41	40.9	2.35	.17
Control	129	36.5	5.11	.45	41.0	2.49	.22
Head Start	111	38.5	5.77	.55	41.3	2.20	.21
Total Sample	432	37.1	5.56	.27	41.1	2.36	.11

As found last fall, Head Start children averaged about two pounds heavier than Home Start and control children and were about one-third of an inch taller.

Summary. Of the total spring sample, 3½-year-old boys and girls were the only children who were of normal height, and only 3½-year-old girls were of normal weight. As found last fall, Home Start and control children were generally similar and almost consistently below the norms while Head Start children were somewhat heavier and taller and often approached or were above the norms.

Schaefer Behavior Inventory (SBI)

The SBI consists of 15 descriptive statements of child behavior that are read by the community interviewer to the child's parent. Two typical items are "Stays with a job until he(she) finishes it" and "Likes to take part in activities with others." The mother indicates the degree to which the description fits the child by responding on a seven-point scale from "never" to "always." The SBI contains three scales of five items each, labeled Task Orientation, Extraversion-Introversion, and Hostility-Tolerance. A list of the SBI items is presented in Table IV-51; the numbers identify each item in the following tables. Note items 10 and 11 have been reversed in scoring to be consistent with the implicit meaning of their scales.

Spring 1974 Analyses

During the fall 1973 psychometric analysis, it was tentatively decided to remove item 11 from the Extraversion-Introversion scale and omit it from the overall Home Start evaluation. In spring 1974 the psychometric analysis on the SBI was conducted twice, once with item 11 included and once with item 11 omitted. The reason for this duplication of analyses was to attempt to replicate the fall 1973 findings which led to the decision to omit item 11. Since the spring analysis confirmed the fall 1973 findings, the analysis with item 11 omitted was performed. Thus all tables except for the percent response and the intercorrelation matrix reflect analyses of the SBI with item 11 omitted. During the spring 1974 data collection 433 SBIs were completed. One child from the control group did not receive the SBI.

Response distributions. The distribution of child behavior ratings is shown in Table IV-52. A comparison of these data with fall 1973 response distributions shows a marked similarity of responses on each of the 15 items. As in the fall, there was a tendency by parents to use socially desirable ratings in describing their children's behavior.

Correlations. The item-scale intercorrelation matrix is presented in Table IV-53 (the Extraversion-Introversion scale subtotal is presented with item 11 included and excluded). As in the fall, item 11 was the item which correlated lowest with its own corrected item subtotal (.22). This relationship was somewhat better than in the fall (r=.11), but remained marginal. All other corrected item-subtotal correlations ranged from .25 to .63 with all items except item 6 above .35.

These were all in an acceptable range. The median squared multiple R of each item with the rest of the items was .22. Item 11 also did not correlate well with the other items on the Extraversion-Introversion scale ranging from .14 to .20. Item intercorrelations of the other items on the Extraversion-Introversion scale ranged from .33 to .61. The poor performance of item 11 was similar to the findings obtained during the fall 1973 data analysis. It should also be noted that the removal of item 11 from the Extraversion-Introversion scale subtotal resulted in increasing the correlation of the other Extraversion-Introversion items with the scale score. In short, these add support to the conclusion to omit item 11 from the Extraversion-Introversion scale in the overall Home Start evaluation. A principal components factor analysis further supported this position (see below). Except for item 11, every SBI item correlates higher with its own scale score than with the other scales except item 10 on Task Orientation. Item 10 correlated .36 with the Task Orientation subtotal and -.45 with the Hostility-Tolerance subtotal. This same finding occurred on the fall 1973 data analysis.

Factor analysis. Two factor analyses were conducted on the SBI items, first with all 15 items, then with item 11 deleted. The first factor conducted on the spring 1974 data resulted in the extraction of four factors with eigenvalues greater than 1.0. These four factors accounted for 56.2% of the total variance. Factor I, which accounted for 16.5% of the variance contained items 3, 12, and 15 from the Hostility-Tolerance scale and item 10 from the Task Orientation scale which loaded with the opposite sign. Factor II, which accounted for 15.8% of the variance, contained items 2, 5, 8, and 14 from the Extraversion-Introversion scale. Factor III, which accounted for 13.9% of the variance, contained all of the Task Orientation items. Factor IV, which accounted for 10.0% of the variance, contained items 6 and 9 from the Hostility-Tolerance scale when loaded in the opposite direction with item 11 from the Extraversion-Introversion scale. The splitting of the Hostility-Tolerance scale into two factors with items 3, 12, and 15 loading together on one factor and items 6 and 9 loading together on a second factor replicated the fall 1973 psychometric analysis of the SBI when all roots greater than 1.0 were requested. However, failure of item 11 to load on factor II with the other items from the Extraversion-Introversion scale indicated that item 11 was not measuring the same behavioral characteristics as the other items on the Extraversion-Introversion scale. This finding was consistent with the results obtained last fall. As a result, a final decision was made to omit item 11 from the overall Home Start evaluation.

A second factor analysis performed on the data without item 11 resulted in four factors which accounted for 58.5% of the variance. The Kaiser statistic was .64, indicating that the data for the factor analysis were not very adequate. This was probably due to the generally low level of the item intercorrelations. The four remaining Extraversion-Introversion items loaded on factor II, which accounted for 16.9% of the variance. Factor III, which accounted for 14.6% of the variance, contained the five items from the Task Orientation scale. The items contained in the Hostility-Tolerance scale separated into two factors. Factor I, which contained items 3, 12, and 15, accounted for 17.8% of the variance and factor IV, which contained items 6 and 9, accounted for 9.2% of the variance. The loading of the Task Orientation and Extraversion-Introversion items on distinct factors and the breakdown of the Hostility-Tolerance scale into two separate factors replicated the results obtained during the analysis of the fall 1973 data.

Because the SBI was constructed to measure three dimensions, a varimax rotation of three factors was carried out. These three rotated factors accounted for 51.3% of the total variance, a drop of 7.2% from the four factor rotation. The item loadings for this factor analysis can be found in Table IV-54; Table IV-55 lists the items with high loadings on each factor. All of the items on the Hostility-Tolerance scale now loaded on factor I, which accounted for 19.4% of the variance. The four items on the Extraversion-Introversion scale loaded on factor II which accounted for 16.9% of the variance. The items from the Task Orientation scale loaded on factor III which accounted for 15.0% of the variance. As in the fall 1973 analysis, only item 10 from the Task Orientation scale loaded on more than one factor. While this indicates that item 10 was not exclusively a measure of Task Orientation, its high correlation with the corrected Task Orientation scale score warranted its inclusion on the scale.

Reliability. The alpha coefficients of each scale were calculated to determine the internal consistency of the items. Table IV-56 (below) presents a comparison of the alpha coefficients from fall 1973 and spring 1974. There was little change in the reliability of the items from fall to spring.

Table IV-56

SBI Scale Alpha Coefficients

Scale	Fall 1973	Spring 1974
Task Orientation	.62	.66
Extraversion-Introversion (item 11 excluded)	.66	.72
Hostility-Tolerance	.67	.70

Whole score descriptive data. Scale scores were calculated by summing the ratings of the items in each scale. The mean scale scores, standard deviations, and standard errors for each group are presented in Table IV-57, below.

Table IV-57

SBI Scale Scores by Group

Group		Task Orientation			Extraversion-Introversion			Hostility-Tolerance		
	N	Mean	SD	SE	Mean	SD	SE	Mean	SE	SE
Head Start	192	24.3	5.0	.36	23.7	3.7	.27	18.7	6.3	.45
Home Start	129	22.7	5.3	.46	23.5	4.3	.38	19.5	6.0	.53
Control	112	23.9	4.3	.41	23.4	4.1	.38	19.2	6.2	.58
Total Sample	433	23.7	5.0	.24	23.5	4.0	.19	19.1	6.2	.30

Table IV-58 contains the mean scale scores, standard deviations, and the standard errors by age, by sex, and for the total sample. Note that item 11 was omitted from the Extraversion-Introversion scale lowering the possible score range. Individual scale means were closest to the socially desirable end of each dimension (a low score on the Hostility-Tolerance scale reflects "tolerance").

Fall-Spring Change Analyses

Reliability. Because the analysis of program effects is based on two different samples (a six-site sample for the comparison of Home Start and control groups and a four-site sample for the Home Start-Head Start comparison), the test-retest and internal consistency reliabilities have also been calculated for those samples as well as for the total sample (see Table IV-12). Fall-spring or test-retest reliability of the Task Orientation scale is somewhat low for all four samples (range=.47-.56), however the internal consistency reliability (alpha) was more adequate (range=.56-.70). The reliability of the difference score (based on the total sample) was .25 according to Lord's (1963) formula for unequal variance. The test-retest reliability of the Extraversion-Introversion scale was also low for all samples (range=.38-.52), but coefficient alpha indicated that the scale had satisfactory internal consistency (range=.67-.73). The reliability of the difference score was .39. The Hostility-Tolerance scale had the best test-retest reliability of the three SBI scales (range=.53-.66). Reliabilities for the control and Head Start samples were somewhat higher than for the two Home Start samples. Coefficient alpha for the Hostility-Tolerance scale had a bit higher range of values (.65-.73) than the test-retest reliability. The reliability of the difference score was .23.

Average growth from fall to spring. The means and standard deviations of the fall and spring testing and of the difference scores are presented in Table IV-59. Again, these data are tabulated by sample--the four- and six-site Home Start samples, the six-site control sample and the four-site Head Start sample. The t ratio for correlated means was significant on the Task Orientation and Extraversion-Introversion scales for both Home Start samples, but not for either the Head Start or control samples. The only sample with a significant change on the Hostility-Tolerance scale was the control group. It was interesting that this change was toward increased hostility. The other three samples, though nonsignificant, were in the direction of increased tolerance.

Stability and change in item responses. Tables IV-60 and IV-61 present the percent passing each SBI item in the fall and spring for the six- and four-site samples. The items are listed in decreasing order of gain in percent passing of the Home Start group. The rank of each item (1 = greatest gain) is also given to facilitate comparisons between Home Start and control or Home Start and Head Start. The significance of the gain for each item was tested by comparing the proportion of children answering the item correctly in the fall with the spring proportion, using the chi square test for correlated proportions.

The data in Table IV-60 show that in the six-site sample, Home Start children gained significantly on three of the nine items on the Task Orientation and Extraversion-Introversion scales and lost significantly on two of the five items from the Hostility-Tolerance scale. In the four-site sample, Home Start children gained significantly on one item from the Task Orientation scale and lost significantly on three of the five items from the Hostility-Tolerance scale. Head Start children did not show any significant item changes.

Factor analysis of item change. The items on the SBI are seven-point rating scales. To give each item a change score, the fall rating was simply subtracted from the spring rating. A principal components analysis was used to factor the 15 SBI items for children with no missing item responses. The N for the factor analysis was 420. One of these items (item 11) did not get scored on any of the three scales. Forty-eight percent of the total variance was extracted by five roots. A summary of the factor analysis of the SBI items is found in Table IV-62. In the following discussion, the items loading on each factor are discussed in terms of the gains in percent and passing (as presented in Tables IV-60 and IV-61).

The four Extraversion-Introversion items loaded highest on factor I. The two Hostility-Tolerance items for which every sample showed an average decrease loaded highest on factor II. These items were "gets impatient when can't have what he wants" and "whines when can't have own way." The average decreases on these two items were significant for the two Home Start samples. Four of the five Task Orientation items loaded highest on factor III, with the fifth item, "pays attention," having a loading in the .30's on this factor. There were no significant changes on item means on the four Task Orientation items with highest loadings on this factor, although all mean changes for the two Home Start samples were increases, and all the mean changes for control were decreases. For the Head Start sample, two of the mean changes were increases, and two were decreases. It is the "pays attention" item on which significant change was found for the two Home Start samples.

One Hostility-Tolerance item, "slow to forgive," loaded highest on factor IV. Each of the four samples showed a mean increase on this item. The increase for the control sample was significant. The one item not scored on any scale also loaded highest on this factor. Two of the Hostility-Tolerance items loaded highest on factor V, as did one Task Orientation item, "pays attention." The direction of change in item means on these three items is consistent only for the control sample, in which the average change is always in the undesirable direction.

Summary

As in the fall 1973 analysis, a positive halo effect was evident in the item distributions. Item-scale and interitem correlations were satisfactory for all items except item 11 on the Extraversion-Introversion scale which did not correlate well with either the other Extraversion-Introversion items or the Extraversion-Introversion scale score. Removing item 11 from the Extraversion-Introversion scale increased the correlation of the Extraversion-Introversion items with the Extraversion-Introversion scale score. In a principal components factor analysis, item 11 failed to load with the other items from the Extraversion-Introversion scale. These findings replicate the results from the fall 1973 data analysis and support the decision to remove item 11 from the Extraversion-Introversion scale. When a second factor analysis requesting three roots was performed with item 11 excluded, the items loaded on three factors in accordance with the SBI scales. The scale internal consistency reliabilities remained satisfactory for the spring sample.

Test-retest reliabilities calculated for the six-site and four-site samples were adequate for the Task Orientation and Hostility-Tolerance scales, but low for the Extraversion-Introversion scale. All scales had satisfactory internal consistency for all samples. The t ratio for correlated means was significant on the Task Orientation and Extraversion-Introversion scales for both Home Start samples, but not for either the Head Start or control samples. The only sample with a significant change on the Hostility-Tolerance scale was the control group. The significance of the gain for each item was tested by comparing the proportion of children answering the item correctly in the fall with the spring proportion, using the chi square test for correlated proportions. In the six-site sample, Home Start children gained significantly on three of the nine items on the Task Orientation and Extraversion-Introversion scales and lost significantly on two of the five items from the Hostility-Tolerance scale; control children gained significantly on three of the five items from the Hostility-Tolerance scale. In the four-site sample, Home Start children gained significantly on one item from the Task Orientation scale and lost significantly on three of the five items from the Hostility-Tolerance scale. Head Start children did not show any significant item changes. A factor analysis of item change resulted in factor solutions similar to those from a single test administration.

Pupil Observation Checklist (POCL)

Upon completion of testing and interviewing, each community interviewer was asked to rate the child on a seven point scale consisting of nine bipolar adjectives such as "resistive-cooperative" and "quiet-talkative."[1] The checklist has two scales: Test Orientation items pertaining to the child's behavior during the testing situation, and Sociability items pertaining to the child's general overall behavior as seen by the testers. The POCL items are listed according to scale in Table IV-63A. On the community interviewers' rating form items 1, 2, 5, 7 and 8 have the sociably desirable adjective listed on the right-hand side of the rating scale. For the other items the positive rating is to the left. Responses on the POCL are scored 1-7 with the positive end of each rating assigned the value 7.

Spring 1974 Analyses

In spring 1974, POCL's were completed for 432 children. One Home Start and one control child from the total sample of 434 did not receive the POCL.

Response distributions. As in fall 1973, the testers tended to use the positive ends of the bipolar items with a disproportionately high frequency (see Table IV-63). The effect of this positive response bias was evident in the high means for the two scales (see Table IV-58). The apparent reluctance of the community interviewers to assign an undesirable rating to a child may have created a situation in which very little pre- to post-test change can occur. In this connection, it should be pointed out that the sensitivity of the POCL to group differences is reduced due to this artificial restriction in scale range.

Correlations. Table IV-64 shows the intercorrelations of the POCL items and the item-subtotal correlations. All within-scale inter-item correlations were high and all correlations of items with their scale subtotal were greater than .65 (corrected for overlap). However, high item correlations across scales existed and the correlation between the Test Orientation scale and the Sociability scale was .65. The median multiple R^2 between each item and the rest of the items was .68. Two factors may have contributed to the high interscale correlations. First, the two scales were probably measuring common behavioral referents.

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[1] A tenth item ("calm-excited") was added to the rating form in fall 1973 to conform to the rating scale completed for the home observations, but is not included in the analysis of the POCL data.

That is, the child's test orientation overlaps with his sociability with the tester. Second, high intercorrelations may be attributed to common method variance since both scales request the same tester to complete a seven-point rating.

Factor analysis. Factor analysis of the nine POCL items duplicated the two factors found in fall 1973. This spring these two factors accounted for 78.8% of the total variance; the Kaiser statistic was .94. The first factor, Test Orientation, accounted for 44.7% of the total variance and had as items with highest loadings the five items that have previously been scored together as a Test Orientation scale. The second factor accounted for 34.1% of the total variance and included the four items from the Sociability scale. The factor loadings for each item and a summary of the items loading highest on each factor are presented in Tables IV-65 and IV-66. While the items from each scale loaded highest on their own factor, six of the items had substantial loadings on the opposite factor. In short, the two POCL scales are not factorally distinct from each other. Rather, the scales seem to be measuring the same characteristics of the child as observed by the tester during testing.

Reliability. The alpha coefficients of each scale were calculated to determine the internal consistency of the items. A comparison of the alpha coefficients from fall 1973 and spring 1974 demonstrated that the reliability of the items remained high for both scales (see Table IV-67, below).

Table IV-67

POCL Scale Alpha Coefficients

Scale	Fall 1973	Spring 1974
Test Orientation	.92	.92
Sociability	.90	.90

Whole score descriptive data. Scale scores were calculated by summing the ratings of the items in each scale. The mean scale scores, standard deviations, and standard errors for each group and for the total sample are presented in Table IV-68 on the following page.

Table IV-68

POCL Scale Scores by Group

Group	Test Orientation N	Mean	SD	SE	Sociability N	Mean	SD	SE
Home Start	191	23.8	7.2	.52	191	17.7	6.1	.44
Control	128	24.5	7.5	.66	129	18.2	6.5	.57
Head Start	112	24.6	7.5	.71	112	18.4	6.6	.62
Total Sample	431	24.3	7.4	.35	432	18.0	6.3	.30

Table IV-58 contains the mean scale scores, standard deviations, and standard errors by age, sex, and for the total group. Note that scores on both scales generally increase with age.

Fall-Spring Change Analyses

Reliability. Because the analysis of program effects is based on two different samples (a six-site sample for the comparison of Home Start and control groups and a four-site sample for the Home Start-Head Start comparison), the test-retest and internal consistency reliabilities have also been calculated for those samples as well as for the total sample (see Table IV-12). The fall-spring, or test-retest, reliability of the Test Orientation scale was satisfactory for the Home Start samples (range=.63-.66), but inadequate for the control (.48) and Head Start samples (.49). The internal consistency reliability (alpha coefficient) of the items was excellent for all four samples ranging from .91 to .93. The reliability of the difference score (based on the total sample) was .83 according to Lord's (1963) formula for unequal variances. The test-retest reliability of the Sociability scale was adequate for three of the samples (range=.52-.59), but unacceptable for the Head Start sample (.36). However, alpha coefficients for each of the samples were excellent, ranging from .86 to .92. The reliability of the difference score was .80.

Average growth from fall to spring. The means and standard deviations of the fall and spring testing and of the difference scores for all four scales are presented in Table IV-69. Again, these data are tabulated by sample--the four- and six-site Home Start samples, the six-site control sample and the four-site Head Start sample. The t ratio for correlated means was significant, indicating reliable change from fall to spring in the mean scores for the six-site Home Start sample on the Test Orientation scale and the control sample on the Sociability scale. All other comparisons demonstrated positive change from fall to spring, but none were significant.

Stability and change in item responses. Tables IV-70 and IV-71 present the percent passing each POCL item in the fall and spring for the six- and four-site samples. The items are listed in decreasing order of gain in percent passing of the Home Start group. The rank of each item (1=greatest gain) is also given to facilitate comparisons between Home Start and control or Home Start and Head Start. The significance of the gain for each item was tested by comparing the proportion of children answering the item correctly in the fall with the spring proportion, using the chi square test for correlated proportions.

The data in Table IV-70 show that in the six-site sample Home Start children gained significantly on three items from the Test Orientation scale, but none from the Sociability scale. Control children demonstrated significant gain on two items from the Sociability scale, but none on the Test Orientation scale.

In the four-site analysis, Home Start children do not demonstrate any significant item gains. Head Start children showed significant increase on one item from the Test Orientation scale but none from the Sociability scale.

Factor analysis of item change. The items on the POCL are seven-point rating scales. The score for each individual is the sum of the ratings received on designated items. To code each item for change, the simple difference between fall and spring ratings per item was calculated. These item change codes were submitted to a principal components analysis, using unities in the diagonals. Sixty-five percent of the total variance was extracted by two roots. The factor loadings for these items are also presented in Table IV-72. The two factors perfectly reflected the two scales on the POCL. Factor I accounted for 36.6% of the total variance. All five test orientation items loaded highest on this factor. Factor II accounted for 28.7% of the total variance. All four of the sociability items loaded highest on this factor.

Summary. The spring 1974 data analysis replicates findings from fall 1973. The POCL contains two homogenous factors which are highly reliable. As before, high interitem and item-subtotal correlations exist both within and across scales. The interscale correlation is .65. This can be attributed to common method variance and a "halo" rating effect by the testers, causing overlap between the Test Orientation and Sociability factors.

Test-retest reliabilities were satisfactory for the Home Start and control samples on the Test Orientation scale, and the alpha coefficients for all four samples were excellect. The test-retest reliability of the Sociability scale was adequate for three of the samples, but unacceptable for the Head Start sample. Sociability scale alphas were excellent for all four samples.

The t ratio for correlated means was significant, indicating reliable change from fall to spring in the mean scores for the six-site Home Start sample on the Test Orientation scale and the control sample on the Sociability scale. All other comparisons demonstrated positive change from fall to spring, but none was significant. An item change analysis using the chi square test for correlated proportions revealed significant positive change on three Test Orientation items for the six-site Home Start group, two Sociability items for the control group, one Test Orientation item for the Head Start group and no items from the four-site Home Start group.

The factor solution for the POCL item changes followed the two-scale pattern perfectly. This result is consistent with the high reliabilities both for internal consistency and difference scores found for the two POCL scores and the moderately high test-retest correlations.

Analyses of Parent Measures

High/Scope Home Environment Scale (HES)

Spring 1974 Analyses

The Home Environment Scale (HES) is a parent questionnaire designed to obtain information about the child's home environment. The final form of the HES, used both last fall and this spring, has 37 items (see Table IV-73). Twenty-nine of the items are "yes-no" questions on three different checklists and the rest are single questions which present the mother with three responses from which to choose. Out of these 37 items, only 26 are used in the six-scale analyses. Most of the extra items were included in the questionnaire as fillers, since they were likely to be answered favorably by the mothers and thus contribute to a more pleasant interviewing experience. The analyses are based on a sample of 434 parents.

Response distributions. The percent of responses in each scoring category are presented for the entire sample and each group in Table IV-73. The items are listed by scale in Table IV-74 and discussed below. In respect to the 11 extra items, seven had at least 60% favorable responses, five had over 80% and the remaining four ranged from 44% to 57%.

As with last fall's data, on scale I (warm mother involvement) there was an uneven response distribution in the total sample for all but one of the items (talk about activities). Items 4 (household tasks), 6 (join in play activities) and 8 (talk about feelings) showed a high proportion of positive responses (i.e. a high frequency reported for the activity). Item 10 (play make-believe games) had a disproportionate number of responses in the "not that often" category. Compared to last fall, the figures were lower on the top response for every item (the greatest frequency) but higher on the middle response. The net result was that while item 3 remained the same, items 6 and 8 had more parents responding in the top two categories and items 4 and 10 had less.

For scale II items (checklist of playthings), the total sample data showed a generally even response distribution. Although, like last fall, the percentages of "no" responses were still quite high, every item did have a greater percent responding positively this spring.

On scale III (mother teaches child) the responses were evenly distributed except for item 11g and 11h ("say ABC's" and "recognize numbers") in which the positive response had higher percentages. All of the items had larger percentages in the "yes" category as compared to the figures from last fall.

On scale IV (child helps with household tasks) the results break into two categories. The children do not generally help with the preparation of food (peel, mix or stir) but they do help shop and put away dishes and clothes. Although the same pattern existed last fall, there was a larger percentage of positive responses this time.

As found last fall, scale V (books or reading) showed evenly distributed responses in the total group. However, once again the number of responses in the higher frequency categories did increase. In response to the question about television (scale VI) almost one-half of all parents said that their children watched television two hours a day or more, but this number was somewhat lower than last fall.

Correlations. An intercorrelation matrix of the 26 items and the item subtotal correlations are presented in Table IV-75. The item-subtotal correlations were not generally high (with the exception of scale III) but only one item (5f) had a correlation less than .20. With the exception of two items (9h and 5e) the figures obtained this spring were higher than those from last fall. A comparison of the three groups showed the item-subtotal correlations to be relatively similar, although Head Start was quite low on seven of the items.

Factor analysis. Table IV-76 presents the item loadings that resulted from the principal components factor analyses when four factors were specified in a varimax rotation. The four factors accounted for 37.3% of the total variance, slightly higher than that accounted for in the fall (35.1%). The 23 items for scales I through IV were included in this analysis. Similar to the fall results, scales I and III loaded on separate factors while scales II and IV were split (see Table IV-77). The Kaiser statistic was .42 and the median squared multiple R was .20.

When the analysis specified all eigenvalues greater than 1.0, 51.5% of the variance was accounted for by seven factors. Items for scales I and II were generally clustered while II and IV remained split.

Reliability. The subtotal scores were calculated by summing the numbers designated to the response for each group of items. The internal consistency reliabilities of the resulting totals for the five scales were .72, .58, .89, .54 and .57, ranging from .06 to .20 above last fall's alphas. The alpha coefficients were similar for Home Start and the control group but generally lower for the Head Start group, especially on scales II, IV and V.

Whole score descriptive data. The means, standard deviations and standard errors of means are presented by scale for the total sample and the three groups in Table IV-78. A finding similar to last fall was that the mean scores on all of the scales were each approximately 66% of the total possible score. The Home Start and Head Start scores were close on all scales but the control group were consistently lower.

Fall-Spring Change Analyses

Reliability. Because the analysis of program effects is based on two different samples (a six-site sample for the comparison of Home Start and control groups and a four-site sample for the Home Start-Head Start comparison), the test-retest and internal consistency reliabilities have also been calculated for those samples as well as for the total sample (see Table IV-12). The fall-spring or test-retest, reliability of the Playthings scale was adequate with the two Home Start samples somewhat lower (range = .42 - .47) than the control (.53) and Head Start (.51) groups. The internal consistency reliability (coefficient alpha) was similar for the Home Start and control samples (range = .50 - .59), but lower for the Head Start sample (.44). The reliability of the difference score based on the total sample was .13. The fall-spring test-retest reliability of the Mother Teaches scale ranged from .53 to .75; the alphas for the Head Start sample increased from .53 in the fall to .68 in the spring. The reliability of the difference score was .39. The test-retest correlations of the Household Tasks scale ranged from .50 to .58. On this scale the internal consistency reliability was poor (range = .31 - .50), with the Head Start sample noticeably worse than the other three (range = .31 - .34). The difference score was completely unreliable. The test-retest reliability of the Mother Involved scale was satisfactory (range = .54 - .60) with the Home Start samples somewhat lower than either the Head Start or control samples. The alpha coefficient of the control group was higher than the other three samples, though all were acceptable. The reliability of the difference score was .08. The test-retest reliability of the Books scale ranged from .47 to .59, with the Home Start groups generally lower than the control or Head Start group. The alpha coefficients were acceptable, ranging from .45 to .61, with the six-site sample somewhat higher than either of the four-site samples. The reliability of the difference score was .23.

Average growth from fall to spring. The means and standard deviations of the fall and spring testing and of the difference scores are presented in Table IV-79. Again, these data are tabulated by sample--the four- and six-site Home Start samples, the six-site control sample and the four-site Head Start sample. In all four cases, the t ratio for correlated means on the Playthings scale was significant, indicating reliable change from fall to spring in the mean score. The t tests for the Mother Teaches scale demonstrated significant positive change in both Home Start samples, but not in either the control or the Head Start groups. The t tests for the Household Tasks scale uncovered significant positive change in both Home Start samples and the Head Start sample, but not in the control group. For the Mother Involvement scale, no significant positive change occurred, but change in the control and Head Start samples was in the negative direction with the latter significant. On the Books scale, only the control group did not significantly change in a positive direction from the fall to the spring.

Stability and change in item responses. Tables IV-80 and IV-81 present the percent passing each HES item in the fall and spring for the six- and four-site samples. The items are listed by scale in decreasing order of gain in percent passing of the Home Start group. The rank of each item (1=greatest gain) is also given to facilitate comparisons between Home Start and control or Home Start and Head Start. The significance of the gain for each item was tested by comparing the proportion of children answering the item correctly in the fall with the spring proportion, using the chi square test for correlated proportions.

The data in Table IV- 80 show that in the six-site sample Home Start children gained significantly on all of the items from the Books and Playthings scales and five of the six items from the Mother Teaches scale. The one item for which the increase in the proportion was not significant was for mother teaching child how to write his name. On the Household Tasks scale, three of the six items showed a significant increase in proportion of children allowed to perform the task. These were stirring when things cooking, cleaning or peeling food, and clearing dishes. On the Mother Involvement scale, there were no significant changes in item means from fall to spring. Two of the items, playing make believe with the child, and talking about the child's activities, showed a slight mean decrease.

Control children (Table IV-80) only gained on four HES items. On Books, there was a significant increase in mean on the item reflecting the number of books in the home, but a decrease in mean on the item reflecting the amount of time the mother reads to the child. On Playthings, there were significant increases in the proportion of item endorsements on two of the six items. These were having scissors available and having tape, paste or stapler available. One item showed a drop in proportion endorsement, having put-together toys. On Mother Teaches, only one item showed a significant increase in proportion of mothers trying to teach a skill, the skill being recognizing numbers in books. The proportion endorsement for recognizing letters in books decreased slightly from fall to spring. On Household Tasks, there were no significant changes in proportion of item endorsement from fall to spring. Two of the items, cleaning or peeling food and putting away clean clothing, showed a slight drop in proportion endorsement from fall to spring. On Mother Involvement, there were no significant changes in item means from fall to spring. All average changes on Mother Involvement were decreases for the control sample.

In the four-site Home Start analysis (Table IV-81), the smaller Home Start sample showed significant increases on all items from the Books, Playthings and Mother Teaches scales. On the Household Tasks scale, there were significant increases in proportion of tasks performed on three of the six items. These were cleaning or peeling food, clearing dishes, and mixing or baking. There was a very slight average decrease on finding foods at the store. On Mother Involvement, there were no significant average changes on any items. There was a slight average decrease on talking about child's activities.

Head Start children (Table IV-81) showed a significant change on seven HES items. On Books, there was a significant average increase with respect to the number of books in the home, but not with respect to how often the parent reads to the child. On Playthings, two of the increases in item endorsement proportions were significant. These were for having scissors available and for having paints or magic markers available. On Mother Teaches, there were no significant increases on item endorsement rates. Address and phone number, letters in books, and words on signs showed an increase in proportion, while no change in proportion was found for writing name and recognizing numbers. A slight decrease was found for saying the ABC's. On Household Tasks, there were two significant increases in proportions from fall to spring. These were for cleaning or peeling food and for clearing dishes. A slight decrease in proportion was found for putting away clean clothes. On Mother Involvement, there were two items showing a significant decrease in mean from fall to spring. These were for helping to cook or clean and for playing make believe with the child. Two other items showed an average decrease. These were talking about feelings, and joining in child's games.

Factor analysis of checklist item change. Two kinds of items appeared on the HES--checklists and rating scales. The factor analysis of the checklist items is discussed first. One checklist, household tasks, consisted of six items, all of which were summed together to form a scale. Six of the 12 playthings items were summed to form a scale, and six of the 11 things mother was trying to teach child were summed to form a scale. These three scales followed the pass-fail test scoring format where an item was scored zero if not endorsed by the mother and scored "1" if endorsed by mother. The score for a child on any scale was the sum of the item scores for that scale, or the number of items endorsed by the mother. Eleven checklist items were not included in any scales but were included in the HES item change factor analysis. Items were scored for change using the following convention:

2 = item endorsed both times;
1 = item not endorsed in the fall but endorsed in the spring;
0 = item not endorsed both in the fall and in the spring;
-1 = item endorsed in the fall, but not endorsed in the spring.

These item codes were then factor analyzed for all children with no missing items (N=364). A principal components analysis was done using unities in the diagonals. Fifty-one percent of the total variance was extracted by nine roots. The factor loadings of the 29 items on these nine factors are presented in Table IV-82. In the following discussion, the items loading on each factor are discussed in terms of the gains in percent passing (as presented in Tables IV-80 and IV-81).

The four items loading highest on factor I came from the playthings checklist. The three items scored in the Playthings scale that loaded on this factor were scissors, scotch tape, and paint. Crayons also loaded here but was not included in the score for playthings. Both Home Start samples showed significant increase in item endorsement for the three scored items. In the control sample, significant increase in proportion was found for scissors and scotch tape. For the Head Start sample, significant increase was found for scissors and paint.

Three of the things mothers teach loaded highest on factor II. None of these was included in the Mother Teaches scale. These items were colors, teaching to count, and shapes. In the total sample, only shapes showed a significant increase in proportion endorsement from fall to spring. The endorsement rate was extremely high both fall and spring for the other two items, colors and counting.

Three items, one from each checklist, loaded highest on factor III. Stirring things and teaching to read words both loaded positively on this factor; having old picture catalogs loaded negatively. The playthings item, having a high endorsement rate both fall and spring, was not scored on the Playthings scale. Both stirring and teaching to read words were scored. Both Home Start samples showed significant increase in item endorsement on these two items. The increase in item endorsement for the control and Head Start samples was not significant.

Five items loaded highest on factor IV. Two of the items, teaching ideas like big and little and teaching nursery rhymes, were not scored on the Mother Teaches scale. In the total sample there was a significant increase in proportion trying to teach ideas such as big and little. There was no change in proportion teaching nursery rhymes. Both the fall and the spring endorsement rates for this item were extremely high. The other three items loading highest on factor IV came from the Playthings scale. One of these, yarn, was not scored on the Playthings scale. The increase in item endorsement on yarn was not significant for the total sample. The other two playthings items loading on this factor were having put-together toys and jigsaw puzzles. Both Home Start samples showed significant increase in item endorsement for these two items. The increases in item endorsement for the control sample and for the Head Start sample were not significant.

One household task item (clearing dishes) and one teaching item (address and phone number) loaded highest on this factor V. The proportions for the two Home Start samples increased significantly for these two items. In the Head Start sample, only the increase in proportion for clearing dishes was significant.

Two of the household tasks items loaded highest on factor VI: finding food at the store and putting away clean clothes. No significant increases in either of these items were found. Both the control sample and the Head Start sample decreased in proportion putting away clean clothes.

Three of the unscored playthings items loaded on factor VII: hammers, make-believe toys, and plants. Only plants showed a significant increase in proportion from fall to spring in the total sample. Two household task items also loaded highest on this factor: mixing or baking and cleaning or peeling food. The two Home Start samples and the Head Start sample each showed a significant increase on the cleaning or peeling item. The proportion endorsement declined for the control group. Only the smaller Home Start sample showed a significant increase on mixing or baking.

Two of the scored teaching items loaded highest on factor VIII. These were teaching to write name and teaching to recognize numbers in a book. The item endorsement rate remained constant for each of these items in the Head Start sample. For the smaller Home Start sample, both items showed a significant increase, while the total Home Start sample showed a significant increase only on teaching to recognize numbers. The control group also showed a significant increase on the numbers item.

One scored playthings item and one scored mother teaches item loaded highest on factor IX. These were clay and saying the ABC's. Both Home Start samples showed significant increase on each of these items.

Factor analysis of rating scale item change. Eight of the HES items had a rating scale format with each response option representing a location on a gradient. Five of these items were summed together to form the Mother Involvement scale, and two were summed together to form the Books scale.

A score for each item was devised to reflect the change in item response by the simple subtraction of the fall response from the spring response. These item change scores on the eight rating scale items were then factor analyzed using a principal components solution with unities in the diagonals. Forty-seven percent of the total variance was accounted for by three roots. The factor loadings of the eight items on these three factors are presented in Table IV-83 . In the following discussion, the items loading on each factor are discussed in terms of the gains in percent passing (as presented in Tables IV-80 and IV-81).

Two of the mother involvement items loaded highest on factor I; they were talks about child's activities and joins in child's games. Only the Head Start sample showed a slight increase in mean for the talks about child's activities item, and only the Home Start samples showed a slight increase on the joins in child's games item. The other average differences on these two items were representative of decrease. The third item loading highest on this factor was how often mother read to child. The average increase for the two Home Start samples on this item was significant. For the control sample the average change was a decrease, and for the Head Start sample the average change was an increase. Neither of these was significant.

The three items which loaded highest on factor II came from the Mother Involvement scale. They were: helps with housework, talks about child's feelings, and plays make believe with the child. Both the control and the Head Start samples showed average decreases on each of these three items. For the Head Start sample, the decreases on housework and make believe were significant. For the two Home Start samples, only the make believe average change was negative for the total Home Start sample. All other average changes for Home Start were positive but not significant.

How often the child watches television and the number of books in the home loaded highest on factor III. The television item was not scored separately by sample, but in the total sample the item mean decreased significantly. All four samples showed significant increases on number of books in the home.

Summary

In response to scale I items (Mother Involvement) mothers said that they often spent time with their child playing and talking about the child's activities and feelings but that they rarely joined in the child's make-believe games. Concerning playthings in the home, over 50% of the mothers said that each item was available for the child. In addition, over two-thirds of the families had at least several children's books in the house and read to the child several times a week or more, although most of the children still watched TV everyday. A majority of the mothers had been working with their child on school readiness skills, especially on how to recite the ABC's and recognize numbers in books. And while most mothers didn't let their children help to prepare a meal, they did let them put away dishes and clothes.

The fall-spring psychometric analysis found the test-retest reliability of the Playthings scale to be adequate for all samples. Internal consistency reliability was acceptable for the Home Start and control samples, but marginal for the Head Start sample. Test-retest reliability of the Mother Teaches scale was acceptable for the Head Start and control groups, but unacceptable for either Home Start group. Alpha coefficients for the Mother Teaches scale were satisfactory for all samples. Test-retest reliability of the Household Tasks scale was in the acceptable range, however, the internal consistency was poor for all samples. Test-retest reliabilities and alpha coefficients of the Mother Involved and Books scale were all satisfactory.

In all four cases, the t ratio for correlated means on the Playthings scale was significant, indicating reliable change from fall to spring in the mean score. The t tests for the Mother Teaches scale demonstrated significant positive change in both Home Start samples, but not in either the control or the Head Start groups. The t tests for the Household Tasks scale uncovered significant positive change in both Home Start samples and the Head Start sample, but not in the control group. For the Mother Involvement scale, no significant positive change occurred, but change in the control and Head Start samples was in the negative direction with the latter significant. On the Books scale, only the control group did not significantly change in a positive direction from the fall to the spring.

In the six-site sample, Home Start children gained significantly on all of the items from the Books and Playthings scales and five of the six items from the Mother Teaches scale. On the Household Tasks' scale, three of the six items showed a significant increase in proportion of children allowed to perform a task. On the Mother Involvement scale, there were no significant changes in item means from fall to spring. Control children gained on four HES items; two from Playthings, one from Books and one from Mother Teaches.

The smaller Home Start sample showed significant increases on all items from the Books, Playthings and Mother Teaches scales. On the Household Tasks scale, there were significant increases in proportion of tasks performed on three of the six items. On Mother Involvement, there were no significant average changes on any items. Head Start children showed significant change on seven items; one item from Books, two from Playthings, two from the Household Tasks scale showed positive change. Two items from the Mother Involved scale changed in a negative direction.

It was necessary to conduct two separate factor analyses of item change, one for checklist items and one for rating scale items. For the checklist items, 51% of the total variance was extracted by nine roots. For the rating scale items, 47% of the total variance was accounted for by three roots. One factor from the checklist analysis defined by three items indicating that mother teaches color, shape and number was similar to a factor found on the PSI and Denver.

Mother Behavior Observation Scale (MBOS)

The Mother Behavior Observation Scale is a ten-item observation checklist filled out by the community interviewer following the last visit to a family. The items are listed in Table IV-84. The checklist provides three possible responses corresponding to the frequency that the behavior was observed (never, once or twice, and three times or more) as well as a column to indicate that the mother was not present. There are five items belonging to a "Supportive" behavior scale and four to a "Punitive" scale. One item (amount of child's art work displayed in the home) refers to behavior not directly observed and belongs to neither scale. In addition, this item was not recorded for most of the Head Start families since testing generally took place at the Head Start center. The analyses omit this item and are based on the 423 completed observation forms.

Response distributions. The percent of responses in each scoring category for each item is presented in Table IV-85 for the total sample and each group. On most items, both supportive and punitive, the behaviors were never observed in over half of the cases. However, the punitive behaviors were observed less often than the supportive behaviors. On the average for the punitive behaviors, "never" was checked 69.3% of the time; "never" was checked only 52.0% of the time for the supportive behaviors. In 83.5% of the homes community interviewers saw no examples of the child's art work. As compared to the fall, these "never" figures were lower and the "observed once or twice" were higher on every item. For the "three or more times" category six items were higher than the fall and four lower.

Correlations. An intercorrelation matrix of the nine items and the item-subtotal correlations are presented in Table IV-86. The item-subtotal correlations were relatively high; although the correlation of item 3 (holds child on lap) with its subtotal was only .25, all of the other item-subtotal correlations were between .53 and .65, more than .10 higher than last fall's range. Home Start generally had the lowest item-subtotal correlations and the control group the highest. The median squared multiple R was .39.

Factor analysis. Table IV-87 presents the item loadings that resulted from the principal components factor analysis with varimax rotation when two factors were specified. The two factors accounted for 54.4% of the total variance, somewhat higher than last fall's figure of 48.8%. The nine items from the two scales separated perfectly (see Table IV-88) with the exception of item 3 which had a very low factor loading. When all roots with eigenvalues greater than one were extracted, three factors were obtained accounting for 67.3% of the total variance. In separate analyses for the three groups specifying two factors, the scales stayed intact except for the Head Start data in which scale II items were split. The Kaiser statistic was .76.

Reliability. The subtotal scores were calculated by summing the numbers designated to the response for items on each scale. The internal consistency reliabilities of the resulting totals were .76 and .79, slightly higher than those obtained last fall (.69 and .73). The alpha coefficients were similar for Home Start and Head Start but higher for the control group.

Whole score descriptive data. The means, standard deviations and standard errors of means are presented by scale for the total sample and the three groups in Table IV-89. On the Supportive scale, the score is just over 50% of the total possible while it is just under for the Punitive scale. Both scores are slightly higher than those from last fall.

Summary. More mothers displayed supportive behaviors (48.0%) than punitive behaviors (31.7%), although neither was observed with high frequency. The mothers rarely interfered with testing by making negative comments or threatening the child with later punishment, but only one-half of them ever praised or encouraged their children. These results were similar for mothers in all three groups and also fairly similar to the results obtained last fall although all items were observed with a slightly higher frequency this spring.

Parent Interview (PI)

The Home Start Parent Interview (PI) was originally developed to obtain information about the child's medical history, the parent's involvement in activities outside the home, and the parent's use of community resources. It was also used as a vehicle for obtaining feedback from the parents on their reactions to the testing and the programs themselves. Two sets of questions were added this spring--one to assess the number and type of accidents and how they were treated (discussed below under medical and dental care) and one to assess parent's sense of control. Because of the increased number of questions, the instrument was divided into two parts, one administered during the first visit, the other during the second.

This report of PI data is designed to present a summary picture of the Home Start families involved in the summative evaluation. For details of the item response distributions in terms of the percent of responses in each of the categories, see Tables IV-90 , IV-91 and IV-93. The findings are summarized here under five headings: family and child characteristics, medical and dental care, parent participation, use of community resources, reactions to the program and mother's sense of control. Findings on the parents' reactions to the testing were reported in Chapter III.

Family and Child Characteristics

The information on family and child characteristics was obtained from items 1-3 and 19-35 of Parent Interview II (see Table IV- 90). As found last fall, the "average" family in the total sample had 3.4 children, including the focal child. Families in Home Start and in the control group had the same average number of children (3.5) while Head Start families had slightly fewer children (3.2 per family). The focal child in all groups tested had an average of one younger and two older siblings.

One of the questions on the Parent Interview referred to preschool (other than Home Start) or Head Start experience of the focal children prior to last fall. The data showed that 10.6% of the total sample had previously been in preschool programs. Head Start had the highest percentage (21.4%) as compared to Home Start (6.8%), and the control group (6.9%). The group differences can be accounted for by the fact that Head Start, in some sites, is a three-year program with children starting at an earlier age. Head Start families also had a greater percentage (50.9%) of older siblings who had been in either Head Start or Home Start as compared to Home Start families (26.8%) or control families (24.0%).

Of the 434 respondents (95% of whom were the mothers), 29.9% had graduated from high school. Examination of individual groups showed that similar to last fall's findings, 24.6% of the Home Start focal parents, 33.9% of the control groups and 33.9% of the Head Start parents had completed high school. In contrast to the Head Start group (19.6%), only 2.6% of the Home Start and 2.4% of the control parents had completed one or more years of college. While these figures are nearly the same as found last fall for the first two groups, the figure for Head Start increased by almost nine percentage points. A likely explanation for the difference in groups is that Head Start, as a center-based program, gives the mother time to attend school which she might not be able to do if her child were at home.

Similar to last fall's data, 4.6% of the respondents were found to be taking courses at the time of the interview. Home Start had the highest percentage of respondents currently enrolled in courses (6.8%) as compared to the control group (2.3%) and Head Start (3.6%). The Home Start figure has increased since last fall, the control group has remained the same and Head Start has decreased. A majority of the respondents who were continuing their educations were enrolled in adult education courses (60%) while the rest were split between college courses (25%) and high school courses (15%).

Among all of the respondents, 33.3% currently had paying jobs, slightly higher than the fall's figure of 28.9%. The percentage among all other groups was higher than in the fall although the Head Start percentage was still much higher than that for the other two groups (Home Start-20.8%, control-20.9%, and Head Start-68.7%). This difference is explained by the Head Start requirement that a certain percentage of children enrolled have mothers who are working. Of those respondents who were working, a majority (71.5%) were employed in full-time positions. In approximately 50% of the families someone other than the respondent provided a source of income; in over 90% of these cases it was the father.

Medical and Dental Care

Data on medical and dental care was obtained from items 5-18 of Parent Interview II (see Table IV- 90). Most of the children in the total sample had received DPT, polio and measles inoculations prior to testing. Examination by group showed that Head Start consistently had the largest percentage of children inoculated while the control group had the smallest. With the exception of the percentage of control children who have had DPT shots, all figures were consistently higher than last fall's.

The average length of time since children had last seen a doctor was 4.6 months for the total sample, two months less than in the fall. Home Start and Head Start children had typically not seen a doctor for four months while control children had not seen a doctor for six months. The majority of the visits were for something wrong (61.5%) rather than for a check-up (38.5%). However, 49.7% of the visits by the Home Start children were for check-ups as compared to 37.5% of the visits by Head Start children and 22.7% by control group. Approximately 1/3 of the Head Start families were assisted by Head Start personnel while close to one-half of the Home Start families were assisted by a home visitor; assistance took the form of making the appointment and/or providing transportation. In addition, the programs paid for approximately 30% of their families' visits. Very few control families received any form of assistance from outside of the family.

The average amount of time that had passed since the focal child had seen a dentist was 3.7 months, nearly half that of the time reported last fall. Again, the time since the control group's last visit was considerably longer than Home Start or Head Start (6.9 as compared to 3.1 and 4.3 months). In contrast to the visits to doctors, visits to dentists were generally for a check-up (68.8%). Head Start and Home Start personnel assisted their families on approximately 90% of the visits by making the appointments and/or providing transportation. The programs also paid for over 80% of the visits.

The type of accidents that the focal children suffered most frequently were falls (15.4%) and cuts (12.0%). The number of responses in all other categories was too low to draw any conclusions other than that the frequency of accidents that the mother considered to be "serious" was low. Although the data from the three groups were quite similar, Home Start generally had the highest figures and Head Start the lowest. The amount of time that Head Start children spend in the center may account for this trend. About one-half of the incidents of falls and cuts were treated at a hospital or by a doctor rather than at home but very few necessitated staying overnight.

Parent Participation

The interview included questions about the parent's participation in community groups and organizations such as Boy Scouts, the PTA and church organizations (item 33, Table IV-90). For the total sample all figures were comparable to those from the fall, with the greatest participation (36.7% of the families) in church organizations or social clubs. The figures remained relatively unchanged within each group as well, with the control group still participating the least (60.8% reported no participation in the groups listed) and Head Start the most (67.0% participated in one or more groups). Of the total sample, half of the families reported that they were not active in any group, about one-third said there was one group in which they were active and about 20% reported participating in more than one group. Head Start had a considerably larger percentage of families (33.0%) active in two or more organizations as compared to Home Start (19.3%) or the control group (12.3%). This may be due to the fact that a greater proportion of Head Start families are located in urban areas where group participation is not as easily deterred by transportation problems.

Use of Community Resources

Item 36 of Parent Interview II asked about awareness of and use of community agencies and services (see Table IV-90). Most parents in the total sample had a high level of awareness of community resources. Over 90% of the parents interviewed knew of welfare, food stamps, local hospitals, public health clinics, child care or day care programs, food commodities, state employment offices, job training programs and Planned Parenthood. Awareness of medicaid, mental health clinics, family counseling agencies, recreational programs, legal aid and the housing authority was above 69%. These figures were generally higher than those obtained last fall although once again there was very little variance among groups in terms of their awareness.

A much smaller percentage of the sample population, however, had ever used the resources. The most widely used facilities were the local hospitals (83.7%) and the public health clinics (80.6%). Other resources used by over half of the families included food stamps, welfare and the state employment office. The least used were the mental health clinics and family counseling agencies. The figures matched those from the fall data and once again all three groups were quite similar.

As with last fall, local hospitals and public health clinics were in greatest use at the time of the interview (55.9% and 61.1%). Approximately one-third of the sample were also currently receiving food stamps and welfare.

All families were also asked if either of the programs assisted them in using any of the resources. The most assistance was received in order to obtain services from public health clinics. Home Start and Head Start received the most assistance (29.5% and 23.2%) and the control group reported that they received assistance much less frequently (6.4%). The high incidence of Head Start parents receiving assistance with day care programs may be a function of the fact that the Head Start program itself can be interpreted as day care service.

Reactions to Home Start and Head Start Programs

Parent Interview I contained five open-ended questions designed to find out what Home Start and Head Start parents and children liked and disliked about their respective programs and what future benefits they expected to derive from them (see Table IV-91 , items 9-14). To the first question which asked what the focal child especially liked about Home Start or Head Start, there was an interesting group difference. Forty percent of Home Start mothers reported that their child particularly liked the educational activities and 29.8% reported their child liked the social activities. Head Start responses were just the reverse: 11% reported that the focal child especially liked educational activities and 62% said their child liked the social activities. Approximately 12% of the Home Start parents mentioned that their child liked the home visitor, but none of the Head Start parents mentioned the Head Start teacher. As compared to last fall the percent of positive responses from both groups concerning the educational activities decreased somewhat but the percent in favor of the social activities, field trips and teachers increased. Seven percent of the Home Start mothers and 17% of the Head Start mothers reported non-specific positive comments about their programs, for example, "likes the center" and "likes the center's food." Approximately 10% of the Home Start mothers and 7% of the Head Start mothers mentioned that field trips were a good program activity.

When asked what they didn't like about the program, only 27% of the Home Start mothers made a negative comment; 73% responded with a positive comment. The percentage of Home Start mothers responding with negative comments was considerably lower than it was last fall. When asked the same question, Head Start mothers were more likely to mention a negative aspect of the program (48%); of these, the single largest complaint was about naps (23.4%).

The greatest percentage of Home Start (68.4%) and Head Start (80.2%) parents made only non-specific comments about the program when asked "what other things do you think the program should do for your child?" Some Home Start parents did comment that they would like the program to focus more on school readiness (5.8%), and that the home visit was too short (6.3%). Some Head Start parents were also concerned about school readiness (5.4%), while others thought social adjustment (5.4%) should receive greater emphasis.

Home Start and Head Start parents were also compared on their knowledge of, and participation in, policy council meetings and parent get-togethers (Table IV-91, items 15-21). Fifty-five percent of the Home Start parents had heard of the policy council, compared with 70% of the Head Start parents. Of those parents who were aware of the policy council, 60% of Home Start parents (compared to 49% of Head Start parents) said they had attended a meeting.

Mothers in both programs were also asked two open-ended questions in reference to parent meetings. The first question asked what was discussed at parent meetings. About 79% of the Home Start mothers and 97% of the Head Start mothers who responded said the main topics at meetings were program policy, such as election of officers and/or planning group activities. These figures were considerably higher than those from last fall. Nine percent of the Home Start mothers indicated that community resources were also discussed; no Head Start mothers mentioned community resources. Topics which were not mentioned by many mothers in either program were educational activities, health, and child rearing. The second question asked parents if anything significant was not mentioned at parent meetings. Ninety percent of the parents did not feel that any important topics were omitted from public discussion. Of mothers responding that additional topics should be discussed, staff problems, equal rights, and getting more parents involved in the program were typical suggestions.

A greater number of Home Start mothers (91%) than Head Start mothers (77%) reported that there had been planned program get-togethers or outings for parents. Attendance, however, was only slightly different for the two groups (Home Start 79.2% and Head Start 72.9%). The percentage of mothers who said there had been get-togethers increased considerably from last fall but the attendance figures have maintained their high rate.

In general, it appears that more Head Start parents are aware of policy council activities than Home Start parents, but that the extent of parent participation in such activities is about the same for both programs. Home Start appears to have more informal get-togethers than Head Start and Home Start parents report slightly higher attendance rates.

Several questions from the spring 1974 Parent Interview were administered to Head Start parents to learn more about the extent of child and parent involvement in the daily program (see items 23-27, Table IV-91). Of the 110 mothers responding, 96% said their children spent a full five-day week at the center; two children were reported to be attending four days a week and two attended three days a week. Children spent an average of 7.6 hours a day in the Head Start center, but some spent as few as five hours and others as many as nine hours. Mothers were asked about the amount of time they had spent in the Head Start center in the past two weeks. Of the 112 mothers responding, 31 (27.7%) indicated they had spent time at the Head Start center; 15 reported spending between one and three hours at the center, ten estimated they spent between nine and 22 hours, and six mothers responded that they were at the center more than 40 hours a week. When asked if Head Start staff had spent time in their homes during the previous month, 30 mothers (27%) said yes and the average time of the visits was about 90 minutes, with a range from 10 minutes to eight hours.

Mother's Sense of Control Inventory (MSCI)

One of the goals of the Home Start program is to increase the parents' ability to deal with situations and problems they encounter from day to day. It is hoped that as parents become more comfortable with the processes of obtaining medical care, using various community agencies and participating in their children's education, they will gain a greater sense of power or control over their own circumstances. In spring 1974 a series of questions were added to the Parent Interview in an attempt to assess parents' sense of control. The eight questions, which ask the parent how they would deal with a variety of problems, are presented in Table IV-92. Four items asked how the parent would deal with outside agencies or individuals--the schools (item 1), city or county government (item 4), policy (item 5) and a landlord (item 6)--and four questions asked what they would do about suspected or actual problems with their children--hearing problem (item 2), accident (item 3), illness (item 7) and eating problem (item 8).

Responses to the eight open-ended questions were coded into three categories representing the degree to which mothers indicated that they would take direct initiative in resolving the problem. The definitions of the categories are as follows:

1 = Mother indicates that she would do nothing, that she does not know what to do, or the action suggested by the mother is not directed toward solving the problem;

2 = Mother indicates that she would ask a third party for help;

3 = Mother indicates she would take initiative for direct action or would obtain more information about the problem

The MSCI was administered to all 434 parents in the spring sample, but 23 mothers had fewer than seven valid items and were exclued from the analyses.

Response distributions. The response distributions for the MSCI items is presented in Table IV- 93. It is evident that almost all of the mothers indicated a desire to take direct action or seek more direct information. This finding is similar for each of the groups. As a result of the clustering of more than 80% of the responses in one category on all of the items, the variance of the items and the sensitivity of the items to group differences is minimal. Consequently, the MSCI can not be considered a satisfactory evaluation instrument.

Correlations. The item intercorrelations and the corrected item-scale correlations are presented in Table IV-94. It is clear that the extreme skewness of the items and the small item variances were responsible for the poor interrelationship between the items and the low item-scale score correlations. Both of these psychometric indices support the conclusion that the MSCI is not a satisfactory instrument.

Whole score descriptive data. The means, standard deviations, and standard errors of the MSCI are presented by group and for the total sample in Table IV-95, below. Since the quality of the items on the MSCI is poor, no attempt was made to interpret the meaning of the group scale differences.

Table IV-95
MSCI SCALE SCORES BY GROUP

Group	N	Mean	SD	SE
Home Start	179	22.0	1.9	.14
Control	126	21.8	2.1	.19
Head Start	106	22.7	1.7	.17
Total Sample	411	22.1	2.0	.10

Summary. The Mother's Sense of Control Inventory is a set of eight questions that were administered for the first time this spring to assess parents' sense of control over problems their children might have and problems with outside agencies. Responses indicate that almost all parents desired to deal with problems by taking direct action or by seeking additional information. The failure of the responses to differentiate individuals and the extremely low item intercorrelations indicate that the MSCI is not an adequate instrument for detecting program effects.

Summary of the Parent Interview

The Parent Interview provided interesting information on the characteristics of the three groups in the sample. Home Start and control group families were the same size and neither group had many families who had focal children or older siblings with previous preschool experience. On the other hand, Head Start families were slightly smaller and almost a quarter of the focal children and one-half of the older siblings had been in a preschool program prior to last fall. As for the parent's education, although Head Start and the control group had the same percentage of mothers who were high school graduates, Head Start had many more mothers who had had at least a year of college. Despite the fact that Home Start had the lowest average level of education, the group had the greatest percentage of parents currently enrolled in courses.

While the figures on the number of children who had been inoculated and the length of time since they had seen a doctor or dentist all improved since last fall, medical and dental care received by Head Start and Home Start children was considerably better than that received by children in the control group. These results appear to be directly linked to the programs as they provided assistance to their families by making appointments or providing transportation as well as paying for over 30% of the visits to doctors and over 80% of the visits to dentists. All three groups were similar on the percentage of accidents that the mothers perceived to be serious. Although the frequency of all types of accidents was low, falls and cuts were most prevalent and were generally treated by a doctor or at a hospital rather than in the home.

As found in the fall, Head Start had the greatest percentage of families involved in community organizations and the control group the least. Home Start, showing some increase in the figures since the fall, fell in the middle. All groups had the greatest participation (over one-third of the families) in church or social clubs. Head Start had a considerably larger percentage of families involved in more than one organization than either of the other two groups.

Most parents had a high level of awareness of community resources although relatively few were actually utilizing the services. The facilities that were used most were the hospitals and public health clinics while those used least were family counseling agencies and mental health clinics. All three groups were similar in their knowledge and use of the resources although the control families, as would be expected, rarely got assistance from the Head Start or Home Start programs.

Family reactions to the Home Start and Head Start programs suggested differences in the way parents view the programs. Almost all parents had favorable reactions to their specific program, but Home Start parents tended to emphasize the educational aspects while Head Start mothers mentioned the social aspects. When asked about parent policy committees, although a greater percentage of Head Start parents were aware of them, more Home Start parents actually attended such meetings. In terms of parent get-togethers, a higher percentage of Home Start parents were aware of and attended such get-togethers, although the rate of attendance did not differ greatly from the Head Start figure.

When Head Start mothers were questioned about their own and their children's participation in the program it was found that almost all children spent five days a week and an average of eight hours at the center. Only one-quarter of the mothers, however, had visited the center within two weeks of the time of interview. One-quarter of the mothers said that a Head Start staff member had visited their home within the past month.

8-Block Sort Task

One procedure for assessing mother-child interaction in a teaching context is the 8-Block Task developed by Hess and Shipman (1965) in their Chicago study of maternal teaching styles. The 8-Block has been used in the Planned Variation Head Start evaluation and in the ETS-Head Start Longitudinal Study, which was one of the reasons it was originally selected for use in the Home Start evaluation. In this section of the report the 8-Block Task is described, evidence on the reliability of coding from the tape recordings is reported, psychometric analyses of the 35-category coding system are presented and the development of the mother interaction "scores" from the spring 1974 data is described.

Administering the 8-Block Task

Although the situation created by the task is artificial it does provide an opportunity for direct observation of the mother's behavior that complements the verbal reports obtained from parents on the Home Environment Scale.

There are three stages in the 8-Block Task. First, the community interviewer guides the mother through the block sorting procedure in a standardized way, then the mother is asked to teach the task to her child, and finally the child is asked to demonstrate whether he has learned the principles for sorting the blocks.

In the first stage, the community interviewer teaches the mother how to sort eight wooden blocks into four quadrants of a 12" x 12" board. The blocks vary on four dimensions--height (tall or short), mark (X or 0 on the ends of the blocks), color (red, yellow, green, or blue), and shape (rectangular or circular in cross-section). The relevant dimensions for sorting are height and mark. In the second section of the task, the mother teaches her child how to sort the blocks. Although the community interviewer proceeds through a series of discrete steps in a fixed order, the mother is told she can teach the child in any way she wants. The third stage of the task begins when the mother tells the community interviewer that she is finished with her "teaching." The community interviewer then gives the child two new blocks (one at a time) and asks him to place them on the board in the group where they "belong." The results of the child's placements and his explanations of the placements indicate whether the child has learned the sorting task and can generalize the sorting principle to new objects that vary on the same dimensions. The analysis of the child's "score" has already been presented in an earlier section of Chapter IV.

The complete task administration was tape recorded using battery-operated cassette tape recorders and the tapes were returned to the High/Scope Foundation for coding. Nonverbal behavior (mother moving blocks and punishing child and child moving blocks) was recorded by the community interviewer on a score form. Since no reliability estimates were available for these categories, and since monitoring reports indicated difficulties in recording the child placements (see Chapter III), it was decided not to include these categories in the analyses.

The test administration procedures were consistent from fall to spring and only minor changes were made in the coding system. Complete coding instructions can be found in Appendix D of Interim Report IV. The 38 categories coded last fall were reduced to 35 in the spring by dropping one category that rarely occurred (talk about future task), by combining the praise and acknowledge categories together, and by combining the threaten & demean category with the bribe category. Before conducting the fall-spring analyses reported here, the appropriate combination of fall codings was done to make the fall and spring categories comparable.

Reliability of Coding

Individual categories. Reliability of coding was established before proceeding with analysis of the data. The 402 8-Block tapes were coded by five individuals. In order to obtain estimates of the extent to which the codings made by one coder would agree with those made by any of the others, a random sample of 16 tapes was coded independently by all five coders. Although the coders knew that the tapes were being used for establishing reliability, they did not consult with each other about the coding.

The coding procedure was based on analyzing a continuous stream of events with no artificial divisions, such as time sampling. Thus, the number of events coded by each coder for a particular tape was not always the same. In order to calculate reliability on an event-by-event basis the five codings were aligned by inserting null events. This was done by comparing each of the four coding forms with the tape and inserting null events as required to equate the total number of events per tape.

The reliability method used was Cartwright's alpha. The procedure consists of comparing, event-by-event, the categories coded by each pair of coders. Tallies are kept of the number of times the pair was in agreement and the number of times the pair did not agree on the coding of the category. The reliability figure was calculated by dividing the total number of times the category was used by at least one of the coders into the number of times the coders agreed on the category selected, (agreements/agreements+disagreements). This method of reliability calculation was selected rather than the overall percent agreement method (total frequency by observer 1/total frequency by observer 2) because the overall percent agreement does not insure that both coders ever code the same behavior at the same time. For example, if two coders observed ten events and each coded category "A" five times and category "B" five times, the overall percent agreement method results in a reliability estimate of 100% for both categories even though coder 1 could have coded the odd numbered events "A" and the even numbered events "B" while coder 2 did the opposite. The event-by-event procedure demands that both coders agree on the same event at the same point in the stream of events.

This procedure was followed for each pair of the five coders resulting in ten reliability estimates for each of the 35 original categories. The arithmetic mean of the ten estimates for each category was taken to be the reliability estimate and is reported in Table IV-95. A mean of .50 seems to be a reasonable interim for adequate reliability. Although agreement might seem to be a low degree of agreement, it should be kept in mind that with a 35-category coding system the probability of change agreement on the assignment of an event to be a category is extremely low. Of the 35 categories, 20 showed reliability coefficients that were considered to be too low for inclusion in analyses of individual categories. Five of the 20 categories, however, are probably not stable reliability estimates because the events being coded occurred so infrequently that one or two disagreements had a drastic effect on Cartwright's alpha.

Reliability of scores. Four of the 8-Block interaction "scores" described below are combinations of two or more individual categories. The extent to which the coders agreed in the coding of each score was also calculated. The Cartwright's alpha reliability of each of these scores is presented in Table IV-96. Two of the scores used in the 8-Block analysis are not simply combinations of already-coded categories. The coder agreement for these categories was determined by calculating the mean of the ten pair-wise correlations among coders. For the Interactions/Minute score the mean r was .99; for the Mean Length of Mother String score the mean r was .97.

Analyses of Spring 1974 Categories

Response distribution. As reported for the fall data, response distributions were highly skewed with a large number of mothers or children producing a narrow range of responses. By dividing each frequency by the amount of time the mother spent in teaching the child, the skewness was somewhat lessened.

At the same time the number of events was equated for time, making the scores more comparable from one mother to another. All but four behavior categories occurred less than once per minute (the mean events/minute ranged from a low of .03 for "child direct request" to a high of 1.84 for "request understanding--unclassified").

The distributions of responses, divided into nine intervals, are presented in Table IV-97. Although the distributions are highly skewed, with the majority of mothers and children exhibiting fewer than .5 events per minute in a particular category, there were a few events (such as child "Talk About--Unclassified") for which as many as 5.2% of the individuals had between 4.5 and 10 events per minute.

Factor analysis. A principal components analysis with varimax rotation was carried out on the 35 mother-child interaction categories. Eleven factors with eigenvalues greater than 1.0 were extracted which accounted for 61.5% of the total variance (see Table IV-98); this compares with 10 factors accounting for 59% of the variance in last fall's data. Although the exact loadings vary somewhat from previous factor analyses, there is a tendency for the categories to cluster in much the same ways. The Request Talking categories (1-4) loaded together on factor I along with two of the Child Talk categories and accounted for 10.1% of the variance.

The correction categories loaded together (factor VII), many of the mothers' non task-specific verbalizations loaded together, and some of the dimension-specific (height and mark) mother talk variables loaded together (e.g., factor III). Although some of the factors relate to conceptual dimensions of maternal teaching style that would be important to assess, the factor structure is complex and not easily interpreted. Some of the categories that would be expected to load together did not; in fact six of the factors had only one or two items with substantial loadings (i.e., greater than .50). Four of the items had communalities lower than .50.

8-Block Scores

Derivation of scores. The analysis of mother-child interaction data obtained from the 8-Block testing situation continues to be highly exploratory. One reason for this is the somewhat ambiguous nature of the 8-Block data. On the one hand mother teaching variables are conceptualized as potentially important program outcomes -- Home Start is a parent-oriented program and certain changes in mothers' behavior are to be expected as an outcome of participation in the home visit program. On the other hand, it is also expected that one of the purposes of focusing the program on parents is that they (especially the mother) will become important mediators of changes in their children's behavior. With data on mother teaching behavior obtained in an interactive situation it is especially difficult to determine the direction of the casual chain; in fact, there is every reason to expect that the mother's behavior should be a function of her child's behavior as well as vice versa. If mothers' behavior is conceptualized as a mediating variable, then the 8-Block task can be viewed as an observational procedure in which it might be possible to identify factors in the child's environment that change over the course of the program and that might have some effect on one or more child outcomes. For the first time in the Home Start evaluation, there is comparable fall-spring 8-Block data (coding changes in previous data collections had limited the comparability of data across time). Thus it is possible to use the fall-spring data collected this year to determine which 8-Block variables do reveal change.

A second reason for the exploratory nature of these analyses relates to limitations inherent in the 8-Block methodology. Several features of the task and of the data available from that task should be kept in mind as findings from the 8-Block are presented. The procedure creates a relatively structured situation in which the mother is asked to "teach" her child a sorting task that is relatively difficult for most of the children (see results of 8-Block child task, Table IV-41) and that is representative of only a portion of teaching behaviors that could reasonably be expected to change as a consequence of participation in Home Start. The information that could reasonably be obtained from this mother teaching situation is limited to verbal interactions. Although verbal behaviors are crucial, this is an important limitation since, not only are nonverbal mother and child behaviors excluded, but interpretations of verbalizations are restricted when nonverbal components of the situation may be affecting the mother's verbal teaching behavior. Nevertheless, information obtained from the 8-Block does provide a picture of mother behavior based on actual observation that supplements verbal reports obtained by the Home Environment Scale.

The 8-Block "scores" included in the whole score analysis (Chapter V) and in the analysis of program effects (Chapter VI) have been constructed in an attempt to obtain psychologically meaningful variables. Because this process is still in the exploratory stage, the scores reported here should not, strictly speaking, be used for inferring program effects. Rather, the analyses included in this report are considered to be a necessary preliminary step for developing specific hypotheses that will be tested in the next wave of children now entering Home Start and Head Start programs.

The strategy has been to examine mother teaching variables that seem to be psychologically meaningful (on the basis of the literature and common sense) and then to look at group differences on these variables and relationships between them and child outcomes. The six "scores" selected for the whole score analysis, then, represent a set of hypotheses regarding features of the mother's behavior available from the 8-Block coding system that would be the most meaningful indicators of program effects.

The six scores describing mothers' behavior include four that were derived from the coding categories and two that represent a different aspect of teaching style. The four scores from the 8-Block category system are:

- Request Talk. This score was obtained by summing categories 1 to 3 (Request Talking--height, Request Talking--mark, and Request Talking--height and mark). Since the category frequencies were divided by total teaching time (see Table IV-97) the score "controls" for total time and represents the rate at which the mother makes requests for talking rather than the absolute number of such requests. It is assumed that, other things being equal, high scores on Request Talk represent desirable teaching behaviors since these requests are attempts by the mother to elicit verbalizations from the child that focus on the dimensions that are relevant for sorting the blocks. Verbalizations coded here include, for example, "What size is this one?" "Is this X or is this O?" and "What's that on top of the block?"

- Diagnostic. This score is category 4, Request Talking--unclassified. Instead of questions which aim to elicit specific verbal responses, these are requests that seem to be more likely to get the child to think about the sorting problem. Mothers might ask, for example, "What's the difference between these two blocks?" or "How's this one the same as that one?" The label, diagnostic, represents an assumption that mothers may use these questions as a device for understanding or diagnosing the child's comprehension of the task whereas Request Talk is designed to elicit labeling.

- Talk About. This score is the sum of categories 13 to 15 (Talk About--height, Talk About--mark, and Talk About--unclassified). A high score means that the mother is more likely to make declarative statements that mention the dimensions that are relevant to the sorting solution. It might be assumed that higher rates of Talk About help to make the dimensions more salient for the child. Along with Request Talk, this score may represent the mother's attempt to help her child prepare for the task of explaining why certain blocks go together. In fact, however, Talk About may be an inverse function of the child's ability level. Correlations with child ability measures such as the PSI and the DDST-Language scale are generally negative in the spring data (Tables V-2 to V-5 in the next chapter present the correlations of all six 8-Block scores with the important whole scores available on the sample families). To be useful outcome variable, Talk About may have to be examined with the child's ability controlled for.

- Feedback. Categories 20, 21 and 23 were summed to obtain this score--Praise/acknowledge, Encourage and Correction/alone. This score is intended to represent the extent to which the mother provides information to the child regarding his verbalizations or block placements.

Two additional mother scores were derived from information on the quantity and pattern of mother-child interaction. Since the mother and child events were coded in such a way as to preserve the proper sequence, it was possible to identify two variables that may be indicators of important teaching styles.

- Interactions/Minute. This variable represents the average number of times per minute that the conversation shifts from the mother to the child or from the child to the mother. It might be hypothesized that the better "teacher" is the mother who permits a greater number of verbal interactions with her child. This is obviously a gross measure in the sense that the quality of the interaction is not taken into account as it is in the first four scores.

- Mean Length of Mother String. This score is designed to represent the other side of the coin, i.e., the extent to which the mother speaks in uninterrupted sequences. The score is equal to the mean length of all strings of mother events, defined as sequences of mother events bounded by a child event or by the beginning or by the end of the tape. It is expected that, since the 8-Block task requires the child to be able to verbalize the solution, mothers who engage in monologues (i.e., longer mean length of string) may be less successful in helping their child to learn the task.

In addition to the six mother variables, it was decided to use the coded information on child verbalizations to obtain an additional child measure. The score derived is Child Talk and was obtained by summing the frequencies per minute in categories 26, 27 and 28 (child talk about height, mark, and height and mark). The score represents the extent to which the child verbalizes the specific dimensions of the task during the mother teaching period, e.g., "These are tall," "Tall X," or "Looks like a Cheerio."

Preliminary analysis of scores. To provide some minimal indication of the utility of these scores, comparisons of the fall and spring data were made. To provide an indication of the stability of the scores over time fall-spring test-retest correlations were calculated for the three groups and for the total sample (see Table IV-99). Although the correlations are generally low, Interactions/Minute was the most stable score with a test-retest correlation of .42 in the control group. Mean Length of String was the least stable in the control group (r = .10) but showed much higher fall-spring consistency for the Home Start group (r = .39).

The average change from fall to spring was assessed by calculating the means and standard deviations for the fall and spring data and for the difference scores. These analyses are presented in Table IV-100 for the six-and four-site samples. In almost every case the standard deviation of the mean decreased from fall to spring with the largest decrease occurring for Mean Length of String. The t ratio for correlated means calculated on each score for each sample indicated the following reliable changes from fall to spring: Diagnostic (control group only), Talk About (all four groups), Interactions/Minute (control group only), and Mean Length of String (Head Start only).

Summary

The majority of the categories coded from the 8-Block tapes continued to be coded with acceptable levels of coder agreement. The six scores derived from the individual categories were also reliable in terms of coder agreement. Factor analysis of the 35 categories for the total sample found that categories loaded in much the same way as in the fall. Six mother teaching "scores" and a child talk score were derived from the data. The six mother scores represent hypotheses as to the areas where program effects may be found in the second wave of Home Start children.

V

RELATIONSHIPS AMONG MEASURES

This chapter summarizes the results of factor analyses and intercorrelations of the various scales and measures of the Home Start Evaluation. The purpose of the factor analysis of all test scores, rating scales and demographic variables was to summarize interrelationships between the diverse measures to see if any global parent or child characteristics were being measured.

A total of 35 whole scores (listed in Table V-1), representing demographic characteristics and scores from the tests and interviews administrered this spring, were used in the factor studies reported in this chapter. The intercorrelations of the 35 scores are presented for the total sample and for each of the three groups in Tables V-2 to V-5. The rotated factor loadings for both the principal components and image analyses are presented for the total sample and for the Home Start, control and Head Start groups in Tables V-6 to V-9.

Factor Analysis--Total Sample

As was done last fall, two factor analyses were completed for the total sample: a principal components analysis with unities in the diagonals and an image analysis with squared multiple correlations initially in the diagonals. The purpose of the principal components analysis was to describe empirically all major dimensions of the project variables. The image analysis served to describe the common variance.

In the principal components analysis with varimax rotation, nine factors were extracted from the 35 variables. These nine factors accounted for 58.4% of the total variance. The loadings on these rotated factors are presented in Table V-9; the factors may be summarized as follows:

- Factor I (accounting for 12.9% of the variance) contained age, height, and five child cognitive measures (DDST Language, Fine Motor and Gross Motor scales, Child 8-Block score and PSI).

- Three mother teaching variables from the 8-Block loaded high on factor II (accounting for 8.5% of the variance) along with Child Talk; the mother variables were Diagnostic, Request Talk and Interactions/Minute.

- Factor III (8.3%) was also a "mother" variable with five of the HES scales having high loadings, along with the SBI Task Orientation scale.

- Factor IV (5.7%) represents a food factor, with the food and nutrition totals loading high, along with weight.

- Child ratings constitute factor V (6.1%): the POCL scales loaded with two of the SBI scales; in addition, an 8-Block mother score (Mean Length of String) had a moderate loading on Factor V.

- SES makes up factor VI (accounting for 4.6% of the total variance)--the two variables, occupation and mother's education loaded together.

- Factor VII is difficult to interpret, and it accounted for only 3.9% of the total variance. Three scores had moderately high loadings--six, urban/rural and the 8-Block Talk About score.

- Two scores from different but related measures loaded together on factor VIII--the Supportive scale from the MBOS and the 8-Block Feedback score.

- The only score with a substantial loading on factor IX was the MBOS punitive scale.

Although there is a strong tendency toward supporting previous findings (see Interim Report IV) that the whole score factor structure largely represents a methods variance, it is encouraging that HES-Supportive and 8-Block-Mean Length of Mother String loaded together since they are two conceptually related variables collected in very different ways.

An image analysis, followed by varimax rotation, was also computed on the 35 scores. In the image analysis, only the variance that each measure has in common with all of the other measures is used in computing the factors, instead of using the total variance which contains considerable error variance.

In the image analysis for the total spring sample 41.7% of the total variance was common and four factors accounted for 69.0% of the common variance. Fifteen of the 35 scores had very low communalities (less than .25) and did not show substantial loadings on any factor. Factor I (accounting for 11.6% of the total variance) essentially replicated factor I of the principal components analysis; most of the child cognitive measures loaded on this factor along with age, height and the POCL Test Orientation scale. Factor II contained five of the 8-Block interaction variables, factor III was composed of four of the HES scales and factor IV had food and nutrition scores and weight as the only variables with substantial loadings.

The image analysis, in conjunction with reliability estimates, allows an estimation of the true (non-error) variance that is unique to each measure. The percent of common variance that a particular measure shares with other measures is estimated by the communalities (h^2 in Tables V-6 to V-9); the percent of error variance accompanying each measure is estimated by the difference between alpha reliability and 1 (alphas for 15 of the whole scores are presented in Table IV-12); the percent of unique, non-error variance of each measure is estimated by the difference between the reliability coefficient and the image analysis communality.

The scores that did not share a substantial portion of the common variance varied considerably in the percent of unique variance they account for. Alpha coefficient reliabilities have been calculated for 15 of the scores included in the image analysis. The h^2 from Table V-9, the spring alpha based on the total sample and the difference are listed below for the whole scores with low communalities in the image analysis:

Score	h^2	Alpha	Alpha - h^2
POCL-Sociability	.25	.91	.66
SBI-Extraversion-Introversion	.08	.71	.63
SBI-Hostility-Tolerance	.12	.71	.59
HES-Mother Teaches	.18	.69	.51
SBI-Task Orientation	.20	.59	.39
DDST-Personal Social	.18	.42	.24

Perhaps the notable finding here is that the scores which share only a small percent of the variance with the rest of the scores and which contribute a substantial percent of unique, non-error variance are primarily measures of social behavior collected in the forms of ratings by other persons.

Factor Analysis--The Three Groups

The principal components and image analyses, as well as the score intercorrelations, were computed separately for the Home Start, control and Head Start samples. The correlation matrices are presented in Tables V-2 to V-4 and the factor loadings in Tables V-6 to V-8.

Although there appears to be general consistency in the patterns of factor loadings of the three samples with the total sample findings presented above, discrepancies are difficult to interpret. The differences in number of factors with eigenvalues greater than 1.0 and in the percent of variance accounted for can be summarized as follows:

Sample	Principal Components			Image Analysis	
	Number of Factors	Percent of Variance Accounted for	Percent of Variance Common	Number of Factors	Percent o Variance Accounted for
Home Start	10	65.3%	50.7%	4	64.6%
Control	12	71.7	56.2	5	64.2
Head Start	12	70.1	57.9	5	58.0
Total Sample	09	58.4	41.7	4	69.0

Without resorting to factor matching procedures, it is difficult to assess the nature of the differences in solutions derived from the three different samples. The relatively small sample sizes for the three groups when treated separately also mean that there would be more error variation since 35 scores are being factor analyzed with group Ns ranging from about 100 to 200.

Summary

Factor analyses of the 35 whole scores found the scores clustering on nine factors. The major factors were child cognitive performance, mother teaching, home environment, food intake, social behavior and SES. Results of an image analysis suggest that there are four factors that the measures have in common--child cognitive performance, mother teaching behaviors, home environment and food intake. Ratings of social behavior seem to provide information on children's behavior that is unique and not common to the remainder of the Home Start measures.

VI

ANALYSES OF SEVEN-MONTH HOME START OUTCOMES

Two questions about the effectiveness of the Home Start program are examined in this chapter using fall 1973 and spring 1974 change data:

- Have Home Start families surpassed control families in achieving program goals during the first seven months?
- Have Home Start families kept pace with Head Start families in achieving program goals during the first seven months?

Data from 192 Home Start families and 130 control families in six summative sites[1] were used to examine the first question; data from 132 Home Start families and 112 Head Start families in four summative sites[2] were used to examine the second question.

Nine program goal areas have been selected to categorize variables for presenting findings. Five of them are child goal areas:

- School readiness,
- Social-emotional development,
- Physical development,
- Nutrition,
- Medical care.

Four of them are mother[3] goal areas:

- Mother/child relationship,
- Mother as teacher,
- Home materials for child,
- Use of community resources.

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[1] Huntsville, Alabama; Dardanelle, Arkansas; Wichita, Kansas; Cleveland, Ohio; Houston, Texas; and Parkersburg, West Virginia.

[2] Wichita and Cleveland were excluded because in those sites entering Head Start children were a year older than entering Home Start children.

[3] Although both parents are equally emphasized in the Home Start Guidelines, about 95% of the parent data reported here is from mothers.

All Home Start to control comparisons are presented first, using a four-part format for each goal area describing measures, expected results, findings, and conclusions. Home Start to Head Start comparisons are presented next, using a shortened format. Finally, a summary of major findings is presented.

Seven-Month Child Outcomes: Home Start to Control

School Readiness

Measures. Four measures have been used to assess short-term effects of the Home Start program on children's school readiness skills:

- The Preschool Inventory, a measure of children's achievement in skill areas that are commonly regarded as necessary for success in school;
- The DDST Language Scale, a measure of children's ability to understand spoken language and to respond verbally;
- The 8-Block Child Task Score, a measure of children's ability to acquire abstract concepts taught by the mother;
- The 8-Block Child Talk Score, a measure of how many task-related comments children make while mothers teach them to sort four kinds of blocks into groups.

Expected results. Home Start's philosophy is to assist mothers to become better teachers of their children, rather than to assist children directly. Because of this, immediate child growth in school readiness was not listed in the Home Start Guidelines (OCD, 1971) as a direct program goal. With a parent-oriented approach it seems reasonable to expect changes in the mothers to appear first, followed later by changes in children. This lag between mother and child improvement might be long enough to prevent child changes from appearing in the first seven months of the program.

Although the lag in child school readiness improvement is reasonable based on Home Start's parent-oriented philosophy, some events in the sites might act to minimize any lag. Early information about home visit activities revealed that many home visitors spent more time working with children than with mothers. Often home visitors used child activities to establish rapport with the mothers, but afterwards found it very difficult to redirect their focus to the mother. For many families, then, the children were direct beneficiaries of home visitor services and might be expected to show rapid school readiness development. While short-range child improvement is desirable, it must be accompanied by improvement in mother teaching skills before long-range child growth will be supported as intended in the program objectives.

Even when home visitors spend an appropriately large amount of time with mothers, much time is devoted to direct school readiness activities with children as the home visitor demonstrates activities for the parent and involves the mother in those activities. Even if the basic mother-oriented philosophy is being followed, then, fairly rapid child changes would be expected if home visitors are effective.

In summary, although the basic mother-oriented philosophy does not lead one to expect immediate child school readiness changes, in practice such changes are expected by the end of the first seven months.

Findings. F-ratios were significant at the .05 level for three of the four school readiness measures, including the PSI, the DDST Language, and the 8-Block Child Talk scores (Table VI-1). A surprising 7.6% of PSI variance was predicted by knowing which group a child was in; just over 1% of the DDST Language variance and 3% of the 8-Block Child Task variance was predicted by group membership. Results for the 8-Block Task favored the Home Start children but were not statistically significant.

Conclusions. These results reflect very favorable child school readiness outcomes for the first seven months. After seven months of participation in the program, Home Start children scored higher than control children on PSI items involving knowledge of colors, body parts, shapes, prepositions, and questions of general information (Table IV-14); on DDST Language items involving colors, opposites, prepositions, plurals, and adjectives such as cold and hungry (Table IV-34); and on the amount of task-related talking children did while their mothers taught them to sort four kinds of blocks into groups.

The PSI, with the largest group effect, is the most crucial of the three because it samples the widest range of school readiness skills. Twelve out of 32 PSI items showed significant fall to spring increases for the Home Start children but not for the control children (Table IV-14). These items represent a fairly broad range of content, suggesting that differences between Home Start and control children are not simply attributable to recognizing colors or body parts, say, or any other single area which might represent an artifact of the teaching process.

Unfortunately the PSI impact is somewhat overestimated in these data, since there is evidence to suggest that at least two or three home visitors from different sites directly taught the test to some of their children. Community interviewers reported that several children spontaneously answered occasional test questions before being asked. There were instances of this during fall testing also, which seemed to indicate lack of understanding on the part of home visitors about the criteria for judging program effectiveness (i.e., fall to spring increases, rather then absolute levels). There is no evidence to suggest "teaching the test" was widespread, but rather it seems to have been an initiative by a few overzealous home visitors who wanted to do best for their families. The overestimate is probably quite small taken over all children. Future evaluators using the PSI would be well advised to develop a "parallel form" of the PSI. This would permit different but equivalent test forms for pre- and post-testing, which would minimize "teaching the test." Quite possibly the unused items from the 64-item version could be combined into a workable parallel form.

With such large improvements in school readiness after only an hour or so of program contact each week, one question naturally arises: What caused the improvements? On one hand, the home visitor involvement with the child during that hour might have caused it, suggesting by analogy that a one hour per week Head Start experience might be sufficient to produce the same improvements. The cost implications of this explanation are profound since they suggest that perhaps ten times more children could be served with existing funds.

On the other hand, the measured child improvement might be due to improved mother teaching behaviors occurring throughout the week, as predicted by the program's parent-oriented philosophy. This explanation would affirm the importance of helping parents to become better educators of their own children, rather than teaching children directly.

To answer this question an additional analysis was performed to find out if children who gained the most in school readiness had mothers who gained the most in the number of skills they reported teaching their children. This was accomplished by using an index of mother teaching change (H/S HES Mother Teaches Scale, residual from post predicted by pre) to predict child school readiness change (PSI and DDST Language separately, pre constant). Some additional variables known to affect school readiness change were also included in the prediction equation to remove systematic error variance and increase precision of the test. Results from both the PSI and the DDST Language analyses showed that mother teaching improvement significantly predicts child school readiness improvement ($F = 4.03$, $p < .05$; $F = 4.00$, $p < .05$).

The results of these supplementary analyses support the interpretation that child school readiness growth was affected by changes in mother teaching behavior. This suggests the fundamental correctness of Home Start's philosophy to help parents become better educators of their children rather than to help children directly.

In summary, the Home Start program has significantly improved children's school readiness skills after seven months, and the improvements appear to result from improved mother teaching behaviors.

Social-Emotional Development

Measures. Six separate scales were used to assess social-emotional development of the child. Four are rating scales completed by mothers:

- The SBI Task Orientation Scale, a measure of children's task involvement and motivation to complete tasks;
- The SBI Extraversion-Introversion Scale, a measure of children's interest in relating to other people;
- The SBI Hostility-Tolerance Scale, a measure of children's ability to refrain from emotional outbursts when things don't work out just right;
- The DDST Personal-Social Scale, a measure of children's ability to dress themselves and to mix with others.

Two are rating scales completed by community interviewers:

- The POCL Test Orientation Scale, a measure of children's task involvement while working with the community interviewer;
- The POCL Sociability Scale, a measure of the level of children's social interaction while working with the community interviewer.

Expected results. Expectations for the social-emotional area are mixed; there are reasons both for and against expecting higher scores for Home Start children.

One reason for expecting social-emotional improvements is that for seven months the home visitors have been visiting their children, bringing interesting activities, and devoting considerable warmth and attention to them. This kind of supportive interaction with an outside adult would seem to facilitate social-emotional development. In addition, most of the Home Start projects have regular group meetings involving several families, so the children get to meet other mothers and children. Often these Home Start family meetings are held weekly, right in Head Start centers, and typical preschool activities are conducted for the children while mothers meet in an adjoining room. These opportunities to play with other children should also promote social-emotional development.

A second reason to expect increased social-emotional development results from the positive feelings that might accompany children's improved school readiness skills. Many psychologists feel school readiness improvements such as those documented in the previous section are likely to be associated with social-emotional improvements, although it is not clear whether improved social-emotional development leads to increased school readiness or vice versa. The inseparability of cognitive and social-emotional growth was stressed at the first National Home Start Conference, and has been reaffirmed in publications since then.

A third reason for expecting improved social-emotional development stems from the probable need among children from low income families. Evidence from other studies suggests that children of the poor have a higher incidence of social-emotional disturbances affecting school performance than children from higher income classes do. To the extent that high-need children will respond rapidly to improved social-emotional conditions, measureable improvements should be found among Home Start children. Unfortunately, it is not possible to estimate the absolute incidence of social-emotional problems among Home Start and control children with available data so it can only be inferred from other studies that a higher than normal need exists among them.

Even though social-emotional improvement in Home Start children is expected, the emergence of changes might be too gradual for effects to appear in the seven month data. The reason for this "delayed emergence" is the same as for school readiness above, resulting from Home Start's strong parent orientation and the need for mother changes to appear before child changes can reasonably be expected. If gradual changes are emerging, the 12 month data currently being collected should indicate them.

Another reason social-emotional improvements might not be found is related to the difficulty of measuring social-emotional changes in young children. For example, after reviewing 143 social-emotional measures for preschool-aged children, Walker (1973) concluded "standardization procedures are practically nonexistent, reliabilities are generally moderate, and validity is generally poor." Therefore, a possible social-emotional outcome is that improvement may be occurring among Home Start children, but the measures might be too imprecise to detect the changes.

In summary, moderate social-emotional improvements are expected to appear but they might not become measureably large until the 12 month data are collected. It is possible that the Home Start measures might not be precise enough to detect the improvement.

Findings. Home Start mothers reported more favorable results for their children than did control mothers for theirs on all three SBI scales and on the DDST Personal-Social scale, but only the SBI Task Orientation difference was statistically significant (Table VI-1). On the POCL Test Orientation scale both gained equally, and on the POCL Sociability scale control children gained more than Home Start children, but not significantly so.

Conclusions. With but one exception there were no statistically significant differences in growth between Home Start and control children on the social-emotional measures. The lone exception, SBI Task Orientation scale, measures the child's ability to become involved in tasks for extended periods of time, and in many ways is more closely related to school readiness than to characteristics normally thought of as social-emotional skills. This lack of clear evidence postpones a number of key questions about social-emotional development until the 12-month test results become available, soon.

Physical Development

Measures. Two stature measures and two motor measures were used to assess physical development:

- Height;
- Weight;
- The DDST Gross Motor scale, a measure of children's ability to coordinate movement of the whole body to accomplish a task;
- The DDST Fine Motor scale, a measure of children's ability to perform complex movements with portions of the body.

Expected results. The two stature measures will be considered separately from the two motor scales, because they require different conditions for change. Height and weight can be expected to increase only if eating habits change, so expectations hinge on whether diets improve or not. Gross and fine motor skills can be altered by involving children in appropriate physical acctivities, consequently they are under more direct control of the home visitor.

Three observations about height and weight are relevant when assessing expectations. First, average height and weight of Home Start and control children in each age group were below normal when they entered the evaluation last fall (Interim Report IV), indicating need for improvement. Although child stature changes are not specifically listed as objectives in the Home Start Guidelines, improved nutrition is. Fall results indicated that average diets were nutritionally deficient, suggesting a possible causal relationship between subnormal diets and child stature in the evaluation families. Under the most favorable program circumstances, then, one would hope to see improved diets in Home Start families, followed by gains in stature. The stature changes would necessarily lag behind diet improvements, and, consequently, might not yet appear in the seven month data even if improved diets were found.

Second, height is a better indicator than weight of developmental status, but it is very resistant to short-term changes. One would be quite unlikely to observe differential height changes in a seven month period even if optimal diets were attained in the first week of the program (except in cases of extreme initial deficiencies). Thus, realistically, no differences are expected in height between the Home Start and control children. The main utility of height in the evaluation is for serving as a stable baseline indicator of physical development.

Third, weight is amenable to short-term increases, but such increases do not necessarily reflect improved diets. Serious vitamin and trace element deficiencies can exist in diets that produce weight increases in children, because weight levels depend largely on fat and carbohydrate intake rather than on essential nutrients. In addition, overweight among all ages is becoming such a problem in its own right that it is difficult to say whether short-term weight increases are beneficial or detrimental. Thus weight changes, in the absence of height changes, would indicate that something is different about the eating habits of Home Start children, but would not necessarily imply improvement. Weight measurement also has a practical problem associated with it--the bathroom scales used to weigh children are subject to problems of calibration and drift, leading to measurement inaccuracies.

It is not as easy to identify clear entering physical motor deficiencies in Home Start and control children as it is to identify height and weight deficiencies, because there are no clear norms or standards for motor performance. Nor has there been much public concern expressed about the physical motor performance of poor children. In the absence of evidence to the contrary, one can assume Home Start and control children were near normal in terms of physical motor development when they entered so that no differences are expected due to participation in the program.

In summary, height and weight increases would be very desirable because of the children's entering deficiencies; but height changes are not expected because of height's resistance to short-term change, and weight increases might be expected but would not necessarily reflect improved diets. There seems no reason to expect either gross motor or fine motor improvements, since there is no reason to believe the children were below normal when entering the evaluation.

Findings. Of the four physical developmental measures only weight shows a significant difference, with Home Start children being heavier (Table IV-1). The adjusted means for the two motor scales are virtually identical for the two groups, and height shows a very slight difference in favor of Home Start.

Conclusion. The Home Start children's statistically significant weight advantage and small height advantage may indicate that the program is beginning to have a favorable impact on children's diets, but the *Child Food Intake* results will have to be examined before this can be said with certainty. In addition it will soon be possible to test the hypothesis of emerging height differences by examining the fall 1974 data.

Nutrition

Measure. A 24-hour recall method was used to gather data on children's diets, in which the mother was asked to name all food eaten by her child the previous day. Seven nutrition subscores were formed in the coding process, along with a total nutrition score and a yes/no vitamin score:

- *Milk Group score* (milk, cheese, ice cream);
- *Meat Group score* (meats, peanut butter, dried beans & peas);
- *Egg Group score* (eggs);
- *A-Vegetables score* (carrots, squash, sweet potatoes);
- *Citrus Fruits score* (oranges, grapefruits, tomatos);
- *Other vegetables score* (potatoes, apples);
- *Breads & Cereals score* (breads, cereals, macaroni, rice);
- *Nutrition Total score* (sum of previous scores);
- *Vitamins* (yes/no).

Expected results. The nutrition area is the only one having absolute standards that can be used as criteria for judging the outcomes. The accepted Recommended Daily Allowances can be used to cluster foods providing similar nutrients, and then the children's diets can be examined to see if each food group is adequately represented.

Children's reported diets were seriously deficient in calcium, iron, vitamin A, riboflavin, and vitamin C when they entered the evaluation. Since nutrition was strongly emphasized in the Home Start Guidelines, and since it is possible to change food served to children almost immediately even with limited food budgets, there is every reason to expect large improvements in the Home Start children's diets after seven months.

It has been argued that the children may have poor diets simply because there is not enough family money to purchase nutritionally adequate food, but this would not seem to be entirely true since meat, the most expensive staple, was available in adequate amounts in their diets. Rather, the problem seems to be one of nutrition education for parents, exactly as presented in the Home Start Guidelines.

In summary, children's entering diets were deficient in calcium, iron, vitamin A, riboflavin and vitamin C; so improvements would be expected in the milk, egg, A-vegetable, and citrus fruit groups. Breads & cereals and meat intake were adequate, so no improvement is needed or expected in these two groups. Because of the high overall need for vitamins, and the ease with which programs can provide them, a significant increase in the number of children taking vitamins is expected.

Findings. The Nutrition Total scores were not significantly different for the Home Start and control groups (Table VI-1). Only two of the subscores (milk and meat) revealed significant differences, both in favor of Home Start. However, the increase for milk, which is critical because of the importance of calcium to proper bone growth (consequently to proper height), was minute compared to the amount needed to reach a satisfactory level. There was no difference in the proportion of children taking vitamins in the two groups.

Conclusions. The failure to find Home Start to control differences in the children's Nutrition Total scores is quite disturbing in view of the serious deficiencies originally found in the children's diets. Moreover, the Home Start program had no overall effect in providing vitamin pills to partially supplement the children's inadequate diets. Where differences were found, as in the milk scores, they were so small relative to the increases needed as to be meaningless.

The increases in meat and milk may reflect an undue focus on improved protein intake by home visitors, to the distinct detriment of vitamin and mineral intake. It appears that a shift is needed in the emphasis made in nutrition education. In the past, intake of protein foods has been stressed whereas findings in this study and in recently published reports show that this effort has been successful and intake of the meat group is adequate at this time. Emphasis on milk, fruit and vegetable intake is needed. High protein intake of these children could increase requirements for calcium, intake of which has already been found marginal.

Children receiving vitamin supplements were eating better diets than those children not receiving the supplements, so it appears that vitamin and mineral supplementation is made without evaluating the children's needs for these supplements. Dietary supplementation should be considered temporary pending improvement of food intake and should be given only to those whose diets indicate gross nutrient inadequacies. Short-term calcium supplementation may be considered for those with inadequate calcium intake and unusually small stature. It is more important that efforts are directed towards the development of good food habits during the formative years, rather than relying on dietary supplementation to insure adequate intake of vitamins and minerals.

Children, especially 3-6 year olds, have been one of the already identified nutritionally vulnerable groups due to their greater nutrient requirements imposed by growth. Children from the low socio-economic levels are even more vulnerable. The children are dependent on their mothers for their food selection and preparation. It is therefore important that in order to improve Home Start children's diets, intervention has to be made through their mothers. The Home Start program would be an ideal method since intervention occurs primarily with the mother. These expectations have not, however, been met from the results of the dietary study of these children.

The results indicate that there is a need for a well-planned nutrition program based on the findings of this study. The almost total ineffectiveness of the Home Start program to improve children's diets is hard to explain, given the importance placed on nutrition in the guidelines and the serious need of the children. One possible explanation is that the program was viewed primarily as a child education program rather than a comprehensive service program, and the home visitors simply spent very little time on nutrition education. Or perhaps the home visitors did not have the technical support needed from trained nutritionists to properly approach their task. Or maybe mothers are very resistant to changes in eating habits, and the only practical way to improve children's diets is by direct food supplements to each child. Each of these hypotheses needs to be explored in order to find ways to raise program nutritional effectiveness to an acceptable level.

Medical Care

Measures. Three gross indicators of children's medical care were used:

- Immunization Total, a derived score indicating whether children have had DPT, polio, and measles immunizations;
- Months Since Last Doctor Visit;
- Reason for Last Doctor Visit(checkup or something wrong);
- Ever Been to Dentist.

In addition, a number of related questions were asked of mothers to find out more about the nature of the visits and the role of Home Start staff in arranging and paying for them. Tables in Chapter IV will be cited regarding results of these additional questions.

Expected results. The Home Start Guidelines place high priority on providing health services to children. Existing community resources are supposed to be used where possible, but services can be paid for directly out of Home Start funds when necessary. The percent of each project's budget available for direct payment of family medical services is extremely small, however, so if Home Start is to have any meaningful impact it will have to do so primarily by arranging appointments and services with outside agencies.

Immunizations are generally available free in most communities through existing public health services, so the role of Home Start should be to assist mothers in making appointments and getting children to them. Almost 90% of the entering children already had the essential immunizations, limiting possible impact of the program, but one would expect to see a majority of the remaining children get immunized over the seven month period. It does not seem unreasonable to expect over 98% of the Home Start children to have immunizations by spring.

It is difficult to establish an optimal length of time since the last doctor visit, since a decision would depend so much on specific circumstances surrounding each child. In general it seems safe to say that intervals longer than a year are excessive, and that routine checkups every six months are reasonable. For the purposes of interpreting findings presented here, it will be assumed that the more recently children have been to the doctor the better. Some people have suggested that it might be possible to take children to the doctor too frequently, but this would appear to be a problem only for a very few among the low income families being served by Home Start. The question about whether a visit was for a checkup or because of something wrong gets at the issue of preventive versus remedial care. Hopefully more visits will be for checkups among Home Start families in the spring.

Average time since last seeing a doctor was over seven months when children entered the program, suggesting that there is plenty of room for the program to make an improvement. About two-thirds of the visits were for something wrong, suggesting that preventive care is not an important part of most mothers' thinking. Entering information on the number of children who had been to the dentist shows even more room for improvement--over 85% of the children had never been to a dentist.

Findings. The Immunization Total scores show a slight difference in favor of Home Start children, but the difference is not statistically significant (Table VI-1). The highest percent immunized for any of the three types was 92.7, considerably short of 100%.

The number of months since the last doctor visit was significantly lower for Home Start children than for control children. On the average it was about 1.8 months longer since control children last saw a doctor than since Home Start children last saw a doctor. Twenty percent of the control children had not been to a doctor in the past year compared with only 8% of the Home Start children; 78% of the Home Start children had been to the doctor within the past six months compared to only 63% of the control children.

Table VI-1 indicates that almost one-half of the Home Start children's doctor visits were for checkups, while fewer than one-fourth of control children's visits were for checkups. This difference was significant at the .05 level and 7% of the variance was predictable by knowing whether children came from the control or Home Start group.

Table IV-90, Question 9A, shows that the Home Start program helped families to pay for the doctor visit, both directly (31%) and by using free clinics (about 6%). Control families paid for their last doctor visit out of their own pockets 57% of the time, compared with only 26% for Home Start families. Forty-seven percent of the Home Start families had outside help in arranging for the visit (compared to 9% of control families), and 89% of those receiving help indicated it was from the home visitor. About one-third of the mothers indicated that the help was in making the appointment, one-third indicated the help was in providing transportation, and an additional one-quarter indicated the help was both making the appointment and providing transportation.

Significantly more Home Start (89%) than control children (17%) had been to a dentist at the end of the first seven months; almost 50% of the variance was predicted by knowing which group children were in, indicating an extraordinarily powerful program effect. For 80% of the Home Start children the program either paid for the dental visit or arranged free services; only 3% of the Home Start families paid for their own dental services compared to 46% of the control group. Twelve percent more control children than Home Start children received medicaid benefits, suggesting that the Home Start program may have paid for some services that could have been paid for out of medicaid. Almost 90% of the Home Start families had help in making the dentist appointment, and essentially 100% indicated it was the home visitor that helped them. About one-third indicated the help was in the form of making the appointment, another one-third indicated they had received both kinds of help.

Conclusions. These findings indicate the Home Start program has had a major impact on providing medical care to children. Children in the program had been to a doctor more recently, and more likely for preventive reasons. The impact for getting children to dentists was so great that it is almost possible to generalize by saying children in the Home Start program have been to the dentist (89%) and control children have not (17%). Thus Home Start is a highly effective way of providing improved medical care to children. The only recommended improvement in medical care is for the program staff to assist the remaining 10% or 15% of children in getting their required immunizations.

Seven-Month Mother Outcomes: Home Start to Control

Mother and Child Relationship

Measures. Four measures have been used to assess changes in the nature of mother's relationship with their children. Two were completed by the mother:

- The *H/S HES Mother Involvement Scale*, a measure of how often mothers spend time with their children in games, pleasant conversation, and other activities children like;

- The *H/S HES Household Tasks Scale*, a measure of how often children "help" their mothers with some simple household tasks.

Two were observation measures completed by the community interviewers:

- The *MBOS Supportive Scale*, a measure of how often mothers praised or encouraged their children in the presence of the community interviewer;

- The *MBOS Punitive Scale*, a measure of how often mothers scolded, threatened, or criticized their children in the presence of the community interviewer.

Expected results. The *Home Start Guidelines* state that the program should give mothers the opportunity to learn about ways of enhancing children's social and emotional development. One way of helping mothers enhance their children's social-emotional development is by helping mothers improve their own daily relationships with their children. One sign of an improved relationship is an increase in the frequency a mother enters the daily world of her child's games and interests at the child's level; another sign is the extent to which a mother allows her child to feel a part of her daily world, such as by giving the child a part in her daily tasks around the house. The *Mother Involvement Scale* and *Household Tasks Scale* attempt to assess these two aspects of the mother and child relationship. On the basis of program objectives it seems reasonable to expect Home Start mothers to improve more than control mothers on these two indicators of the relationship between mother and child.

Other indicators of the quality of mother and child relationship is the extent to which a mother praises her child, or scolds and criticizes her child. If the program is helping the mothers improve their relationships with their children, the community interviewers should see Home Start mothers praise and encourage children more and scold and criticize them less than control mothers do.

In summary, increases are expected for Home Start mothers over control mothers on the *Mother Involvement Scale*, the *Household Tasks Scale*, and the *MBOS Supportive Scale*; decreases are expected on the *MBOS Punitive Scale* for Home Start mothers compared to control mothers.

Findings. Differences on both the Mother Involvement Scale and Household Tasks Scale were statistically significant in favor of Home Start mothers (Table VI-2). Neither the MBOS Supportive nor the MBOS Punitive differences were statistically significant.

Discussion. These findings indicate that on the average Home Start mothers reported they spent more time involved in their children's activities than control mothers did, and that Home Start children helped more often with household tasks than control children. These findings are assumed to imply improved mother and child relationships for Home Start families, which is likely to enhance the children's social-emotional growth. Failure to find significant differences on the two mother observation scales indicates that changes in the mother and child relationships were not visible to the community interviewers during the testing visits.

Mother as Teacher

Measures. Seven measures were used to gather information about mothers as teachers of their own children. One of the measures was completed by mothers and indicated the kinds of school-related skills mothers taught:

- The H/S HES Mother Teaches Scale, a measure of which elementary reading and writing skills mothers are trying to teach their children.

The other six measures looked at certain elements of the teaching style used by mothers as they taught their children a block sorting task:

- Request Talk, a measure of how frequently mothers attempt to elicit child talk focusing on the relevant block sorting dimensions of height and mark;
- Diagnostic, a measure of how many requests the mother makes for talking of the kind likely to get the child to think about the sorting problem (open-ended questions, rather than questions seeking the answer about the specific dimensions);
- Talk About, a measure of how frequently mothers talk about the relevant dimensions of the sorting task;
- Interactions/Minute, a measure of the average number of times per minute that the conservation shifts from the mother to the child and vica versa;

- Mean Length of String, a measure of the average number of uninterrupted mother comments, reflecting the extent to which the mother engages in a monolog;
- Feedback, a measure of how frequently mothers react to children's comments or block placements (includes praise and acknowledgement, encouragement, and corrections).

These scores were derived by coding audio tape recordings which were made as mothers taught their children how to sort the blocks used in the 8-Block Task.

Expected results. The Home Start program is based on the idea that mothers are the first and most important educators of their own children. The central objective of the program is to help mothers become the best teachers of their children that they can. Among all of the objectives of the program, this one is the most critical to the underlying program philosophy, and the one for which it is most important to demonstrate program effects. Both aspects of mother as teacher--what she teaches and her style of teaching--should improve. For the purposes of this analysis, it is assumed that if mothers attempt to teach a greater number of elementary reading and writing skills to their children they are showing more awareness of their own ability as educators, a positive outcome. It might be easy for enthusiastic mothers to overemphasize basic school skills to the detriment of their children's social-emotional well-being, however, so other indicators such as mother's supportive and punitive behavior, and children's social-emotional behavior need also be considered.

In summary, significant improvements are expected in the number of elementary reading and writing skills Home Start mothers teach their children, and in the teaching style they use with the child in a structured situation. Increases in the number of skills mothers teach may be accompanied by increases in supportive behavior, but should not be accompanied by increases in punitive behavior nor by decreases in children's social-emotional functioning.

Findings. Home Start mothers reported teaching significantly more elementary reading and writing skills to their children than control mothers (Table VI-2). In addition, they were observed to use significantly more teaching requests of the kind likely to get children thinking about the 8-Block Sort Task; they talked about task-relevant dimensions significantly more often; and they had more interactions per minute with their children during the task than did control mothers. There were no significant differences between Home Start and control mothers in the amount they requested task-specific talk, in the average number of uninterrupted comments, or in how frequently mothers provided feedback to their children about comments and placements, although the directions of the differences were favorable to Home Start mothers in each case.

Conclusions. The central objective of the Home Start program is to help mothers become the best teachers of their children they can, and these findings show that the program has had a clear impact on the teaching behaviors of Home Start mothers. The implications of this conclusion are of the utmost importance, for they mean that essential links in the direction of long-range program impact have been established. For one, it is reasonable to expect that mother can now extend help to their children in areas where most of them previously deferred to school teachers. This help to children can occur in between home visits, without any direct staff contact, greatly increasing the home visitor's impact. More importantly, the mother's improved teaching skills can potentially influence younger siblings after the family is no longer enrolled in the program, providing benefits to new children at no additional program cost.

Home Materials for the Child

Measures. The two measures used to find out how many common child materials are available in the home were taken from the High/Scope Home Environment Scale. Both were completed by the mother:

- The H/S HES Books Scale, a measure of how many children's books are in the home, and how often someone reads stories to the children;
- The H/S HES Playthings Scale, a measure of how many of some common, ordinary playthings most children like are in the home;

Expected results. The mother is the most important person shaping her children's home environment. One way she exercises her influence is by providing stimulating materials for her child to play with. With the right materials her children can be creatively occupied in activities that enhance their school readiness skills (social-emotional development and motor skills) even though the mother is not directly present. Even simple materials such as crayons, paper, scissors, paste, magic markers, and play dough keep children occupied for hours as they use their imaginations to make one thing after another. These same kinds of materials are essential to preschools and kindergartens, and are in use constantly, day after day. Other playthings such as puzzles and "put-together" toys sold in stores can also be used advantageously by children if the family can afford them. Books occupy a special place for helping children enter a world beyond the one they find in their home. Although most children enjoy looking at pictures in books, the children need assistance from adults to understand the special magic of the printed word.

For this, children must depend on the mother or other family members to read to them regularly.

Home Start can be expected to help mothers obtain and use these commonly available resources to greatly extend the opportunities for child development in the home. It is a relatively simple matter for home visitors to introduce many of these simple playthings into the home out of project funds, and then to help mothers see the importance of having them continuously available to children; then, perhaps, the mothers will continue to provide them, even when no longer in the program. Because of the importance of books, coupled with their relatively high cost, Home Start projects could establish their own small lending library to extend the effectiveness of available book funds. Although just providing the materials is not equivalent to using them well, most children would benefit from them even with minimal guidance, so just introducing these materials into the home can be seen as an important objective.

In summary, both the Books scale and Playthings scale are expected to show significant improvement for Home Start families over control families.

Findings. Both the Books and Playthings scales from the High/Scope Home Environment Scale were statistically significant in favor of the Home Start families (Table VI-2). Over 9% of the Playthings and 3% of the Books variance was predictable by knowing which group a child was in. Table IV-73 gives the percent of Home Start and control families having each kind of plaything.

Discussion. The Home Start program made statistically significant improvements in the number of books and playthings children have available in their home. Although a clear early impact has been obtained, for most of these common materials considerable improvement is still possible among Home Start families (Table IV-73). One place to begin working to further the obtained improvement is by striving to get children's books to the 22% of mothers who said they had three or fewer in the home, and to encourage the 26% who seldom read to their children to become more involved in such activities.

These findings are an important addition to those of the previous section because they add another dimension to the idea of "mothers as educators." A mother can become a better educator by teaching new things to her child, and by interacting with her child in new ways, but she can also become a better educator by constructively shaping the child's material environment. In so doing she can exert her positive influence even at times when she is not directly involved with her child.

The observed Home Start impacts from this and the previous section also help explain the unusually large school readiness findings appearing at the end of the first seven months.

Use of Community Resources

Measures. Mothers were asked which of 15 community resources they were now using, including each of the following:

- Welfare department;
- Food stamps program;
- Medicaid;
- Food commodities;
- Local hospital;
- Public health clinic;
- Mental health clinic;
- Family counseling agencies;
- Planned Parenthood;
- Day care program;
- Recreational programs;
- Legal aid program;
- Housing authority;
- State employment office;
- Job training programs.

In addition, mothers were asked which of several voluntary organizations they or other family members belonged to, and a composite total score was formed:

- The *Organization Total*, a score indicating how many of the following organizations some family member belongs to: parent-teacher's organization; boy scouts, girl scouts, 4-H Club, or other youth groups; church organization or social club; and political organization.

Expected results. The *Home Start Guidelines* stress the importance of using existing community resources to help Home Start families whenever possible. The 15 agencies and programs represent a broad range of common community resources that families might use, and if Home Start is affecting use of these resources then significant differences between Home Start and control families should be found on several. It is not possible to make specific predictions for each agency or organization because there is no easy way of knowing which among the 15 are available in each of the many Home Start communities and counties. Even for programs such as welfare which is essentially available in every community, it is difficult to make specific predictions because the percent of families eligible for the program is not known, nor is the percent of eligible families already receiving benefits known. It is generally predicted, then, that some of the

15 community resources will be used by a higher proportion of Home Start than control families. The Organization Total includes several different community groups that family members might join, some of which are found in nearly every community, so Home Start improvements are possible and expected.

In summary, some of the community resources are expected to be used by more Home Start than control families, but it is not possible to predict precisely which ones.

Findings. Although every one of the 15 agencies and organizations are used by a higher proportion of Home Start than control families, only one difference was statistically significant, the housing authority (Table VI-2). Home Start mothers reported that their family members belonged to significantly more organizations than control mothers reported theirs belonged to.

Discussion. One of the most important objectives in the Home Start Guidelines is to use existing community resources for helping Home Start families, but the general lack of findings in this area indicates the program has had little success at it. It is not clear whether the failure was due to the unavailabliity of these resources, the ineligibility of families for services, or the ineffectiveness of the Home Start program. It is clear, however, that for whatever reason the program failed to achieve an important objective. If essential services are to be delivered to families it may be necessary to pay for them directly out of the Home Start budget as is done for dentist services (Table IV-90).

Although Home Start families are not getting more free services from community resources than control families, they are becoming more involved in community organizations and activities. This might be taken to indicate that progress is being made in reducing the community isolation that characterizes many of the Home Start families.

Summary of Home Start to Control Outcomes

At the end of the first seven months, Home Start children were significantly ahead of control children in school readiness, and were receiving better medical care as measured by such indicators as length of time since last visit to doctor and number of children receiving dental care. There were no differences between Home Start and control children in the social-emotional and physical development areas, but it is not clear that differences were expected. There was no overall nutrition improvement for the Home Start children, in the face of high need for improvement and clear program objectives, so strong remedial action is recommended to improve the effectiveness of the Home Start projects in overcoming nutritional problems.

Home Start mothers improved significantly on measures of their involvement with their children, the number of things they reported teaching their children, and the number of books and playthings available to their children in the home.

In general, there was no increase in the number of Home Start families using commonly available community resources. Since this was a high priority of the Home Start program, the failure to make any headway towards increased use of existing resources should lead to an examination of possible new approaches for accomplishing this goal.

Seven-Month Mother and Child Outcomes: Home Start to Head Start

The Home Start and Head Start programs have very similar objectives, but approach the task of bringing about family changes in two different ways: Home Start attempts to help its children by working through the mother, supporting her in her role as primary educator of her own child; Head Start works with the child directly, by providing teachers and school settings for the child, with only limited involvement of the mother. The direct contact times of the two programs are very different: Home Start mothers and children are with program staff only about 1 1/2 hours a week, while Head Start children are in contact with program staff 30 or more hours each week. In the face of such a large contact hour difference it does not seem reasonable to expect Home Start to bring about as much measureable impact as Head Start. Yet the 1 1/2 Home Start hours are very individualized and the mother carries on child activities even when the home visitor is away, giving Home Start an advantage in some ways.

It is impossible to predict in advance how much the advantages and disadvantages of home-based methods will influence outcome scores compared to Head Start, but since both attempt to provide comprehensive child services one would predict equal outcomes in all areas for the two programs. Two reasonable exceptions might be noted to this: first, since mother education is so central to the Home Start concept, more mother changes might be expected for Home Start than for Head Start; second, since Head Start children spend so much time socializing with other children in the classroom setting, greater social-emotional development might be shown by Head Start children.

Because all measures were described in the previous sections, an abbreviated format is used here. The results of child measures and then mother measures will be briefly presented, and a single summary section will follow.

Home Start/Head Start child outcomes. Statistically significant Home Start to Head Start comparisons were found in three of the five child goal areas, including school readiness, nutrition, and medical care (Table IV-3). No differences were found in the areas of social-emotional development and physical development.

In the school readiness area, Home Start children scored significantly higher than Head Start children on the Preschool Inventory; there were no other statistically significant differences on the school readiness measures. The difference found on the PSI is more likely due to an artifact of the evaluation rather than to true program effects: on the average Head Start children were administered the PSI pretest 3.3 months after they began attending Head Start classes (Interim Report IV, Table V-13), compared to 1.4 months for Home Start children. By being tested so late, the initial rapid gains expected to occur during the first intensive weeks of the program would have been lost for Head Start children. It is not possible to estimate the size of the initial gain that would have been lost, but it could very likely account for the observed PSI difference between Home Start and Head Start children. In view of this problem, the interpretation placed upon the observed PSI difference is that it does not represent true program differences and should be ignored.

In the nutrition area, Head Start children were reported to have significantly better overall diets than Home Start children (9.3 versus 8.0), although both fell considerably short of the ideal diet score of 12.5. Head Start children consumed significantly more milk, citrus fruits & juices, and other vegetables. These differences can probably be explained by the fact that milk, juice, and lunches with vegetables were served to Head Start children as part of the snack and lunch program subsidized by USDA funds. The immediate conclusion from this finding is that the Head Start food money is very well spent, directly helping to overcome several serious dietary deficiencies of Head Start children.

Home Start, on the other hand, was not able to overcome similarly serious nutrition problems among Home Start children using the current program approach. One nutrition outcome favored the Home Start children, however: Home Start children ate significantly more eggs than Head Start children. This is probably because more Home Start families than Head Start families live in rural areas, and more likely raise their own chickens. Home Start children did not eat significantly more eggs than control children, so the difference cannot be viewed as a program effect.

In the area of child medical care, Head Start children had significantly more immunizations, and had visited a doctor significantly more recently than Home Start children. Virtually 100% of the Head Start children had their essential immunizations, compared with roughly 90% of the Home Start children (Table IV-90); it would seem that very little effort is needed to help the remaining ten or so percent of Home Start children get their necessary immunizations, so perhaps this ought to be established as an immediate high priority program objective. Data from the national evaluation could be used to identify mothers who claimed their child did not yet have all needed immunizations. The last doctor visit was significantly more often for checkups among Home Start children than Head Start children, possibly indicating a greater awareness of preventive care among Home Start mothers.

Home Start/Head Start mother outcomes. Out of 29 statistical tests between Home Start and Head Start mother variables (Table VI-4), only two were statistically significant at the .05 level: H/S HES Mother Teaches, which indicated that Home Start mothers reported teaching more elementary reading and writing skills to their children than Head Start mothers did; and use of day care in which significantly more Head Start mothers reported using day care than did Home Start mothers. The day care reported in this case is Head Start itself, highlighting a benefit of the program for which there is no comparable benefit in Home Start. Sixty-three percent of the Head Start mothers said they used day care, compared to 3% of the Home Start mothers; this finding is accompanied by a corresponding difference in the percent of mothers employed: almost 70% of Head Start mothers have paying jobs compared with only about 20% of Home Start mothers (Table III-18).

Summary of Home Start/Head Start differences. With but few exceptions the Home Start accomplishments of the first seven months kept pace with Head Start accomplishments during the same period. The primary differences between the two are in the areas of nutrition, medical care, and use of day care, in all of which Home Start was lower, and things mothers teach their children, in which Home Start mothers were higher. For the most part, then, Home Start can be viewed as delivering comparable services as the Head Start program.

VII

SUMMARY

Summary of the Psychometric Properties of the Spring Data

The purpose of these analyses was to determine whether the psychometric characteristics of the instruments remained substantially similar for the spring data when compared with the fall data. Knowledge of the stability or lack of stability in fall to spring test characteristics is essential to proper interpretation of findings. The focus of the spring 1974 analyses has been on the total sample, but psychometric analyses of fall-spring change have also been carried out for the four "samples" on which the program effects analyses are based: Home Start and control at all six sites and Home Start and Head Start at four sites.

For the most part, the results of the psychometric analyses (such as response distributions, item and scale score intercorrelations and factor analyses) on the spring sample replicated results and supported tentative decisions that were made based on the fall data analysis. The Preschool Inventory met all the requirements which are required of a good psychometric instrument, although the index of the child's verbalization during testing was dropped because it correlated negatively with the PSI total score.

The psychometric properties of the Fine Motor, Language, and Gross Motor scales from the Denver Developmental Screening Test provided evidence to support the use of these three scales in the overall evaluation. On the other hand, the Personal-Social scale performed poorly as it did in the fall data analysis. Based on the psychometric evidence available, the Personal-Social scale was dropped as a program evaluation instrument. The child's 8-Block Task proved to be very sensitive to the developmental characteristics of the children in the project age range. While success on the placement task rapidly increased with age, the process of correctly explaining a placement in terms of both relevant dimensions proved much more difficult. As a result, the explanation score provided a good index for discriminating the level of children's development. Results suggested that the Child Food Intake Questionnaire was continuing to provide a relatively reliable system for obtaining information on children's nutritional intake.

Analyses of the Schaefer Behavior Inventory obtained the same results as in the fall for all three scales. On the Extraversion-Introversion scale, item 11 continued to present the same problems as encountered in the fall and so it was removed from the scale. All three SBI scales met the criteria for a good evaluation instrument.

The two scales from the POCL both have acceptable psychometric properties, although the scale intercorrelation was high indicating that the scales were measuring the same behavioral characteristics. All five scales on the Home Environment scale also met acceptable psychometric criteria. On the Mother Behavior Observation scale, both the supportive and punitive scales were psychometrically adequate.

Summary of Psychometric Properties of the Fifteen Scales Scored for Change: Total Sample

Average Change

When all children were grouped as one large preschool sample rather than as three separated treatment groups, it was found that 12 of the 15 scales scored for change showed significant average increase from fall to spring. Included among these scales on which significant growth was observed were the scales of a developmental nature (PSI and the four DDST scales) and four of the five HES scales. One of the SBI scales--Extraversion-Introversion--showed significant gain as did the two POCL scales.

The three scales not showing significant change were the Task Orientation and Hostility-Tolerance scales from the SBI and the Mother Involvement scale from the HES. The mean change on Task Orientation was in the expected direction indicative of growth. The average change on the other two scales was in the reverse direction from the desirable, that is, an increase on Hostility-Tolerance and a decrease on Mother's Involvement.

Score Variability and Reliability

Six of the scales (PSI, DDST-Personal-Social, Household Tasks, Playthings, Mother Involvement, and Hostility-Tolerance) showed an increase in score variance from fall to spring. These increases were accompanied by an increase in internal consistency reliability as predicted by classical test theory. Error variance is assumed to be constant. Any change in variance would represent a change in true score variance, not error variance. If score variance increases, then this increase must be contributed to an increase in true score variance, thus a rise in reliability should be observed. A decrease in score variance, accompanied by a decline in reliability, was observed only on the Fine Motor scale. The Language scale and the SBI-TO scales showed essentially no change in either score variability or reliability. Mother Teaches, and the two POCL scales each showed a slight decline in variability but no change in reliability. SBI-EI and Books both showed a slight decline in variability but an increase in reliability. Gross Motor showed no change in score variability but a decline in reliability. The relationship between score variance and reliability followed the predicted pattern for nine of the 15 scales.

Stability of Rank Order of Children from Fall to Spring

When two administrations of the same test do not result in equal means and equal variances, it is difficult to justify a claim for parallel tests, thus negating the interpretation of the test-retest correlation coefficient as a reliability estimate, i.e., the proportion of true score variance in the observed scores. When the pre- and post-tests cannot be considered to be parallel, the interpretation of the test-retest correlation coefficient becomes that of stability of rank order of individuals from test to retest or the predictability of retest scores from original test scores.

The greatest stability/predictability was found for three cognitive development measures: Language (.76), PSI (.68) and Fine Motor (.68). The only other test-retest correlation that reached at least .60 was for the Hostility-Tolerance scale. Correlations in the .50's were found for Books, Gross Motor, Mother's Involvement, POCL-Test Orientation, Household Tasks, and POCL-Sociability. Correlations in the .40's were found for Mother Teaches, Playthings, SBI-Task Orientation, and Extraversion-Introversion. The Personal-Social scale from the Denver had a test-retest correlation of only .34.

Reliability of the Difference Scores

Score variabilities, reliabilities, and test-retest correlations all interact to determine the reliability of the difference scores. Only the two POCL scales showed high reliabilities of the difference scores (.83 for Test Orientation and .80 for Sociability). These high reliabilities of difference scores can be attributed mostly to the extremely high reliabilities for both the fall and the spring scores rather than to an extremely low test-retest correlation. This is fortunate, for a low test-retest correlation for these two scales could possibly be interpreted as lack of inter-rater reliability, because the same tester did not always do both the fall and spring testing for one child. One plausible interpretation of a high reliability of the difference scores is that the two tests pre and post) are not measuring the same characteristic.

Reliabilities in the .30's and .40's were found for PSI, Language, Mother Teaches, and Extraversion-Introversion. The reliabilities of the difference scores of the remaining scales were essentially zero.

In the study of program effects, the scales showing the greatest stability from fall to spring should be the ones for which residual gain would serve as an adequate measure of growth. Language, PSI, Fine Motor, and Hostility-Tolerance showed high stability from fall to spring.

The use of simple difference scores as a measure of change is recommended only for the two POCL scales. This recommendation is made on the basis of the high reliabilities of the difference scores.

Summary of Test-retest Statistics for the Fifteen Scales Scored for Change

Six Home Start Sites

All of the average differences between fall and spring means for all Home Start children were in the direction indicative of positive change. Twelve of the 15 differences were significant. The three which were not significant were SBI-Hostility-Tolerance, POCL-Sociability and HES-Mother Involvement. Scales showing moderate stability of rank order from fall to spring, having test-retest correlations of at least .60, were POCL-Test Orientation, PSI, DDST-Language, and DDST-Fine Motor. Showing low stability from fall to spring, having test-retest correlations less than .45, were SBI-Extraversion-Introversion, HES-Playthings, HES-Mother Teaches, and DDST-Personal-Social. Six of the scales showed an increase in both score variability and reliability, and six showed a decrease in both variability and reliability. Extraversion-Introversion, Books, and Gross Motor showed changes in score variability and reliability, contrary to the predictions of test theory.

Four Home Start Sites

For the four Home Start sites where there was a Head Start program, the average difference between fall and spring means for each scale was in the direction indicative of positive change. Eleven out of the 15 differences were significant. The four differences that were not significant were Hostility-Tolerance, Test Orientation, Sociability, and Mother Involvement.

Scales which showed stability of rank order from fall to spring, having a test-retest correlation of at least .60, were Hostility-Tolerance, Test Orientation, PSI, Language, and Fine Motor. Six of the scales showed an increase in both score variability and reliability, while six showed a decrease in both score variability and reliability. The three scales for which the change in variability and reliability were contrary to that predicted by test theory were Extraversion-Introversion, Playthings, and Gross Motor.

Four Head Start Sites

Thirteen of the 15 differences between fall and spring means were in the direction indicative of positive change. Eight of these differences were significant. The two scales for which the average change was not positive were Extraversion-Introversion and Mother Involvement. The five non-significant positive changes were Task Orientation, Hostility-Tolerance, Test Orientation, Sociability and Mother Teaches. The average decrease on Mother Involvement was also significant. The scales showing stability of rank order from fall to spring, having a test-retest correlation of at least .60, were Hostility-Tolerance, PSI, Language and Fine Motor. Seven of the scales showed a decrease on both score variability and reliability. The other eight showed an increase on both score variability and reliability.

Six Control Sites

For the control children, 12 of the 15 differences between fall and spring means were in the favorable direction. Eight of these positive average changes were significant. The four not showing significance were Extraversion-Introversion, Test Orientation, Household Tasks, and Books. The three scales showing change in the negative direction were Test Orientation, Hostility-Tolerance, and Mother Involvement. The scales showing stability from fall to spring, having a test-retest correlation of at least .60, were Hostility-Tolerance, Mother Involvement, PSI, Language, and Fine Motor. Scales showing instability of rank order from fall to spring were Extraversion-Introversion, and Personal-Social. Four of the scales showed changes in score variability and reliability contrary to what would be predicted by test theory. These four scales were Extraversion-Introversion, Test Orientation, Sociability, and Gross Motor.

Summary of Factor Analyses of Item Changes

Both the SBI and POCL item change factor analyses resulted in factor solutions not unlike those found for item responses from a single test administration. A strong extraversion-introversion factor and a strong task orientation factor were found on the SBI. The hostility items were found to be factorally complex, which had been noted in earlier Home Start SBI factor analyses.

The factor solution for the POCL item changes followed the predicted pattern perfectly. This result is consistent with the high reliabilities both for internal consistency and difference scores found for the two POCL scales and the moderately high test-retest correlations.

The factor solutions for both the PSI and the Denver reflect the learning of specific skills or concepts such as color, shape and number. Interestingly, a factor was found in the HES analysis that was defined by three items indicating that mother teaches color, shape, and number. The PSI specific factors might be labelled color, shape, body parts, number, breadth of experience, and seriation. The Denver factors might be called color, object composition, opposites, gross motor skills, fine motor skills, and prepositions.

Summary of Analysis of Relationships Among Measures

Factor analyses of the 35 whole scores found the scores clustering on nine factors. The major factors were child cognitive performance, mother teaching, home environment, food intake, social behavior and SES. Results of an image analysis suggest that there are four factors that the measures have in common--child cognitive performance, mother teaching behavior, home environment and food intake. Ratings of social behavior seem to provide information on children's behavior that is unique and not common to the remainder of the Home Start measures.

Summary of Findings

Home Start/Control Differences

At the end of the first seven months, Home Start children were significantly ahead of control children in school readiness, and were receiving better medical care as measured by such indicators as length of time since last visit to doctor and number of children receiving dental care. There were no differences.

between Home Start and control children in the social-emotional and physical development areas, but it is not clear that differences were expected. There was no overall nutrition improvement for the Home Start children, in the face of the high need for improvement and clear program objectives, so strong remedial action is recommended to improve the effectiveness of the Home Start projects in overcoming nutritional problems.

Home Start mothers improved significantly on measures of their involvement with their children, the number of things they reported teaching their children, and the number of books and playthings available to their children in the home.

In general, there was no increase in the number of Home Start families using commonly available community resources. Since this was a high priority of the Home Start program, the failure to make any headway towards increase use of existing resources should lead to an examination of possible new approaches for accomplishing this goal.

Home Start/Head Start Differences

With but few exceptions, the Home Start accomplishments of the first seven months kept pace with Head Start accomplishments during the same period. The primary differences between the two are in the areas of nutrition, medical care, and the use of day care, in all of which Home Start was lower, and things mothers teach their children, in which Home Start mothers were higher. For the most part, then, Home Start can be viewed as delivering comparable services as the Head Start program.

References

Beckor, B. C., Indik, B. P., & Beeuwkes, A. N. *Dietary intake Methodologies: A review.* Ann Arbor, Mich.: University of Michigan, November 1960.

Fox, D. J., & Guire, K. E. *Documentation for MIDAS: Michigan Interactive Data Analysis System.* Ann Arbor, Mich.: University of Michigan, 1973.

Hess, R. D., & Shipman, V. *Early experience and the socialization of cognitive modes in children.* Child Development, 1965, *36*, 869-886.

Kaiser, H. F. A second generation little jiffy. *Psychometrika*, 1971, *35*, 401-429.

Lord, F. M. Elementary models for measuring change. In C. W. Harris (Ed.), *Problems in measuring change.* Madison: The University of Wisconsin Press, 1963.

Nunnally, J. C. *Psychometric theory.* New York: McGraw-Hill, 1967.

Veldman, D. J. *Fortran programming for the behavioral sciences.* New York: Holt, Rinehart, and Winston, 1967.

Walker, D. K., Bane, M. J., & Bryk, A. *The quality of the Head Start Planned Variation Data* (Report to the Office of Child Development). Cambridge, Mass.: Huron Institute, 1973.

Wapt, B. K., & Merrill, A. L. *Composition of foods* (Agriculture U.S.D.A. Handbook 8). Washington, D. C.: U.S. Government Printing Office, December 1963.

Table III-1

ASSIGNMENT OF FOCAL CHILDREN TO SITE COORDINATORS AND COMMUNITY INTERVIEWERS

					Number of Focal Children									
	Total		Site Coordinator		Interviewer 1		Interviewer 2		Interviewer 3		Interviewer 4		Interviewer 5	
Site	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
ALABAMA														
Home Start	41	36			7	11	8	8	7	7	11	10	8	
Control	36	30			11	7	7	6	11	11	2	6	5	
Head Start	29	24			0	4	1	4	10	6	12	10	6	
Total Sample	106	90			18	22	16	18	28	24	25	26	19	
ARKANSAS														
Home Start	40	39			9	5	9	8	8	7	7	9	7	10
Control	31	23			5	4	6	6	11	5	7	7	2	1
Head Start	37	27			8	5	11	6	6	4	6	4	6	8
Total Sample	108	89			22	14	26	20	25	16	20	20	15	19
KANSAS														
Home Start	45	28			13	8	8	9	10	11	14			
Control	28	21			6	7	6	7	9	7	7			
Total Sample	73	49			19	15	14	16	19	18	21			
OHIO														
Home Start	48	32	1		15	17	17	15	15					
Control	14	11	1		3	6	9	5	1					
Total Sample	62	43	2		18	23	26	20	16					
TEXAS														
Home Start	37	27	3	0	13	12	8	11	8	4	5			
Control	15	11	0	0	5	4	0	2	7	5	3			
Head Start	38	31	7	6	8	14	13	9	9	2	1			
Total Sample	90	69	10	6	26	30	21	22	24	11	9			
WEST VIRGINIA														
Home Start	40	30			9	8	10	6	10	8	11	8		
Control	38	34			9	7	9	11	11	7	9	9		
Head Start	38	30			15	10	16	7	6	12	1	1		
Total Sample	116	94			33	25	35	24	27	27	21	18		

Table III-2

PERCENT OF FAMILIES TESTED AT SPECIFIED TIME SCHEDULE

SITE	HOME START	CONTROL	HEAD START	TOTAL
Alabama	94.4	83.9	87.5	89.0
Arkansas	71.8	60.9	80.8	71.6
Kansas	51.9	55.0	N/A	53.2
Ohio	71.9	45.5	N/A	65.1
Texas	63.0	45.5	87.1	71.0
West Virginia	100.0	82.4	46.7*	76.6
Total	76.4	62.5	74.8	73.6

Table III-3

MEAN NUMBER OF WEEKS BETWEEN TESTING ON PSI

SITE	HOME START	CONTROL	HEAD START	TOTAL
Alabama	31.2	31.3	30.8	31.1
Arkansas	31.2	31.3	31.2	31.2
Kansas	31.1	31.7	--	31.3
Ohio	31.3	31.0	--	31.2
Texas	31.4	31.4	31.1	31.3
West Virginia	31.0	31.0	31.0	31.0
Total	31.2	31.3	31.0	31.2

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*53.3% of the Head Start families were tested early because of closing of centers for the summer months.

Table III-4

UNSUCCESSFUL TESTING VISITS

SITE	NUMBER OF CONTROL AND HOME START FAMILIES DROPPED AS RESULT	NUMBER OF UNSUCCESSFUL VISITS							
		CONTROL		HOME START		HEAD START		TOTAL	
		# OF VISITS	# OF FAMILIES	# OF VISITS	# OF FAMILIES	# OF VISITS	# OF FAMILIES	# OF VISITS	# OF FAMILIES
Alabama	2	18	11	16	14	14	10	48	35
Arkansas	0	4	2	14	12	2	2	20	16
Kansas	2	13	8	14	8	N/A		27	16
Ohio	1	4	3	21	11	N/A		25	14
Texas	0	11	6	15	8	1	1	27	15
West Virginia	0	8	6	1	1	1	1	10	8
Total	5	58	36	81	54	18	14	157	104

Table III-6

AVERAGE NUMBER OF ADMINISTRATION ERRORS

Measurement	Average No. of Errors per Admin.		Spring Site Range	Spring N*
	Fall 1973	Spring 1974		
PSI	2.2	1.1	0.6 - 2.7	105
DDST	2.1	1.0	0.1 - 1.9	84
8-Block	2.0	0.5	0.1 - 1.1	83
Food Intake	1.3	0.3	0.1 - 0.6	89
Parent Interview I	1.1	0.1	0 - 0.3	88
Parent Interview II		0.2	0 - 0.5	68
Home Environment Scale	0.6	0.2	0 - 0.6	79
Schaefer Behavior Inventory	0.4	0.2	0 - 0.5	80
Height and Weight	N/A	0.05	0 - 0.2	82

*N=Total number of administrations monitored during spring 1974.

Table III-7

PERCENT OF ADMINISTRATION ERRORS BY CATEGORY PSI AND DDST*

Error Category	PSI N=120	DDST N=84
Repeats (Cars and Boxes Item)	1.7	N/A
Repeats (Too Many or Too Few)	26.9	27.4
Failing to Have Correct Materials for Test	2.5	1.2
Incorrect Placement of Materials	11.8	13.1
Incorrect Wording of the Item	9.2	11.9
Skipping an Item or Stopping Test Incorrectly	3.4	7.1
Probing Too Much or Too Little	32.7	1.2
Choosing Inappropriate Environment for Test Item	N/A	4.8
Other	11.8	33.3

*N=Total number of errors.

Table III-8

PERCENT OF ADMINISTRATION ERRORS BY CATEGORY 8-BLOCK N=83*

Error Category	Percent
Incorrect Wording of Questions	19.5
Incorrect Placement of Blocks	4.9
Failing to Ask Parent for Verbal Response	4.9
Failing to Ask Parent for Placement	7.3
Repeats Too Many or Too Few	2.4
Skipping Section	9.8
Failing to Ask Child Correct Questions	4.9
Other	46.3

*N=Total number of errors.

Table III-9

PERCENT OF ADMINISTRATION ERRORS BY CATEGORY PARENT INTERVIEWS & HEIGHT AND WEIGHT

Error Category	Food Intake	Parent Interview I	Parent Interview II	Home Environment	Schaefer	Height and Weight
N*	26	12	15	19	12	4
Incorrect Wording of Item	15.4	8.3	20.0	10.5	--	--
Probing Too Much or Too Little	69.2	--	26.7	31.6	--	--
Skipping Item	--	8.3	20.0	10.5	8.3	--
Commenting Too Much	--	16.7	6.7	--	16.7	--
Other	15.4	66.7	26.7	47.4	75.0	100.0

*N=Total number of errors.

Table III-10

PERCENT OF FAMILY ATTRITION SINCE LAST FALL

SITE	HOME START	CONTROL	HEAD START	TOTAL SITE ATTRITION
Alabama	12.2 (5)	16.7 (6)	17.2 (5)	15.2 (16)
Arkansas	2.5 (1)	25.8 (8)	29.7 (11)	18.5 (20)
Kansas	40.0 (18)	28.6 (8)	N/A	35.6 (26)
Ohio	33.3 (16)	21.4 (3)	N/A	30.6 (19)
Texas	27.0 (10)	26.7 (4)	18.4 (7)	23.3 (21)
West Virginia	25.0 (10)	10.5 (4)	21.1 (8)	19.0 (22)
Attrition by Group	23.9 (60)	20.4 (33)	21.8 (31)	22.3 (124)

Table I[illegible]-11

REASONS FOR NON-PARTICIPATION

	Home Start and Control Group																											
	Family Moved		Over Income		Mother Working		Lack of Interest in Program		Child in Other Preschool Program		Family Could Not Be Reached		Parent Refused Permission		Illness In Family		Family Problems		Other Miscellaneous Reasons		Handicapped		Non-English Speaking		In Home Start But Not In Evaluation		Total Number of Non-participating Families	
Site	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
ALABAMA	5	4	0	0	0	0	3	0	1	2	3	0	0	0	2	1	0	0	0	4	0	0	0	0	0	0	14	11
ARKANSAS	11	2	5	0	7	0	1	1	1	1	0	0	0	0	2	2	0	0	1	3	0	0	0	0	1	2	29	9
KANSAS	3	5	16	0	1	0	5	4	8	7	5	0	0	0	0	0	3	2	14	8	1	0	0	0	11	0	67	26
OHIO	14	11	0	0	1	0	2	3	11	1	7	0	1	1	0	0	0	0	0	3	0	0	8	0	0	0	44	19
TEXAS	6	6	0	0	0	0	1	2	3	1	3	0	0	0	0	0	0	1	1	4	0	0	20	0	0	0	34	14
WEST VIRGINIA	9	9	1	0	0	0	0	1	4	0	3	0	6	0	0	0	1	0	4	4	0	0	0	0	10	0	38	14
TOTAL	48	37	22	0	9	0	12	11	28	12	21	0	7	1	2	3	4	3	20	26	1	0	28	0	22	0	226	93

Table III-12

COMPARISON OF HOME START FAMILIES RETAINED IN SAMPLE WITH HOME START FAMILIES DROPPED

Variable	Retained N	Retained Mean	Dropped N	Dropped Mean	F-ratio	P
Sex	190	1.52	61	1.48	<1	
DDST-FM	179	10.38	59	9.90	<1	
DDST-L	174	26.26	55	25.07	<1	
DDST-GM	157	10.87	53	10.66	<1	
DDST-PS	188	10.47	60	10.25	1.43	
SBI-TO	190	23.62	61	22.82	<1	
SBI-EI	190	22.84	61	22.64	<1	
SBI-HT	190	18.83	61	19.84	<1	
POCL-TO	190	22.58	61	22.72	1.03	
POCL-SOC	190	17.51	61	16.20	1.67	
Food Total	188	11.68	61	11.43	1.40	
Nutrition Total	188	7.98	61	7.98	<1	
Height	185	39.41	60	38.85	<1	
Weight	186	34.08	61	33.46	<1	
SES	177	4.74	55	4.53	<1	
HES-Mom	187	10.63	59	9.56	1.11	
HES-Play	189	8.78	59	8.02	4.52	<.05
HES-Teach	188	8.96	61	9.16	2.03	
HES-Task	189	9.17	61	8.77	3.20	
HES-Book	189	3.69	61	3.54	<1	
HES-TV	185	2.34	59	2.19	<1	
MBOS-Support	181	7.44	61	6.80	2.23	
MBOS-Punish	184	5.20	60	5.00	<1	
8-Block Child	161	3.44	54	3.15	<1	
PSI	139	8.31	40	8.55	1.22	
Occupation	186	4.88	60	4.65	1.11	
Mother's Ed.	181	4.85	56	4.89	<1	
Urban-Rural	183	1.57	60	1.78	5.55	<.05
Age	190	2.82	61	2.69	<1	

Table III-13

COMPARISON OF CONTROL GROUP FAMILIES RETAINED IN SAMPLE WITH CONTROL FAMILIES DROPPED

	Retained		Dropped			
Variable	N	Mean	N	Mean	F-ratio	p
Sex	127	1.49	35	1.34	<1	
DDST-FM	122	10.38	35	10.14	<1	
DDST-L	119	25.73	35	25.80	<1	
DDST-GM	105	10.77	31	10.48	<1	
DDST-PS	127	10.65	35	10.09	1.74	
SBI-TO	127	23.03	35	21.63	2.10	
SBI-EI	127	23.05	35	21.34	3.13	
SBI-HT	127	18.34	35	19.63	<1	
POCL-TO	125	23.14	35	20.86	-1.70	
POCL-SOC	125	16.62	35	16.26	<1	
Food Total	127	11.86	35	11.96	<1	
Nutrition Total	127	7.75	35	8.16	<1	
Height	122	39.78	35	38.93	1.37	
Weight	124	34.42	35	33.60	<1	
SES	116	4.79	32	4.60	1.21	
HES-Mom	119	10.36	33	10.09	1.70	
HES-Play	127	8.44	35	8.06	1.29	
HES-Teach	126	8.74	35	8.74	<1	
HES-Task	127	8.90	35	8.77	<1	
HES-Book	127	3.71	35	8.57	<1	
HES-TV	120	2.35	35	2.37	<1	
MBOS-Support	124	7.11	30	7.23	<1	
MBOS-Punish	126	5.06	31	5.19	<1	
8-Block Child	101	3.20	22	8.05	<1	
PSI	95	8.55	28	8.36	<1	
Occupation	120	4.88	35	4.67	<1	
Mother's Ed.	117	4.94	32	4.92	<1	
Urban-Rural	120	1.51	35	1.69	<1	
Age	126	3.02	35	2.71	<1	

Table III-14

COMPARISON OF HEAD START FAMILIES RETAINED IN SAMPLE WITH HEAD START FAMILIES DROPPED

Variable	Retained		Dropped		F-ratio	p
	N	Mean	N	Mean		
Sex	116	1.46	27	1.56	<1	
DDST-FM	112	10.66	26	10.58	<1	
DDST-L	108	26.40	25	26.88	<1	
DDST-GM	102	11.08	21	10.57	<1	
DDST-PS	114	10.55	26	10.89	<1	
SBI-TO	116	23.60	26	22.58	<1	
SBI-EI	116	23.47	26	23.54	2.35	
SBI-HT	116	19.32	26	18.31	<1	
POCL-TO	115	23.27	26	23.81	<1	
POCL-SOC	115	17.42	26	18.31	<1	
Food Total	116	12.37	26	12.28	<1	
Nutrition Total	116	8.41	26	7.99	<1	
Height	115	39.99	27	40.59	1.51	
Weight	115	35.96	27	37.00	1.27	
SES	107	5.86	22	5.40	<1	
HES-Mom	115	10.69	26	10.65	<1	
HES-Play	116	9.16	25	8.92	<1	
HES-Teach	116	9.43	26	9.15	<1	
HES-Task	115	9.08	26	9.12	<1	
HES-Book	116	4.25	26	3.73	4.25	<.05
HES-TV	113	2.27	26	2.27	<1	
MBOS-Support	105	7.40	25	7.16	<1	
MBOS-Punish	108	4.94	25	4.80	<1	
8-Block Child	94	3.33	23	3.87	1.17	
PSI	99	8.79	24	10.63	<1	
Occupation	114	5.52	24	5.37	<1	
Mother's Ed.	109	3.35	24	5.17	<1	
Urban-Rural	107	1.81	22	1.77	3.53	
Age	116	2.65	27	3.37	7.05	<.05

Table III-15

ANALYSIS OF FAMILIES RETAINED IN SAMPLE FROM FALL TO SPRING HOME START VS. CONTROL

Variable	Home Start N	Home Start Mean	Control N	Control Mean	F-ratio	p
Sex	190	1.52	127	1.49	<1	
DDST-FM	179	10.38	122	10.38	<1	
DDST-L	174	26.26	119	25.73	2.17	
DDST-GM	157	10.87	105	10.77	<1	
DDST-PS	188	10.47	127	10.65	1.19	
SBI-TO	190	23.62	127	23.03	1.83	
SBI-EI	190	22.84	127	23.05	<1	
SBI-HT	190	18.83	127	18.34	<1	
POCL-TO	190	22.58	125	23.14	<1	
POCL-SOC	190	17.51	125	16.62	2.21	
Food Total	188	11.68	127	11.86	<1	
Nutrition Total	188	7.98	127	7.75	<1	
Height	185	39.41	122	39.78	1.44	
Weight	186	34.08	124	34.42	<1	
SES	177	4.74	116	4.79	<1	
HES-Mom	187	10.63	119	10.36	<1	
HES-Play	189	8.78	127	8.44	4.60	<.05
HES-Teach	188	8.96	126	8.79	3.08	
HES-Task	189	9.17	127	8.90	3.48	
HES-Book	189	3.69	127	3.71	<1	
HES-TV	185	2.34	120	2.35	<1	
MBOS-Support	181	7.44	124	7.11	<1	
MBOS-Punish	184	5.20	126	5.06	<1	
8-Block Child	161	3.44	101	3.20	<1	
PSI	139	8.31	95	8.55	<1	
Occupation	186	4.88	120	4.88	<1	
Mother's Ed.	181	4.85	117	4.94	<1	
Urban-Rural	183	1.57	120	1.51	<1	
Age	190	2.82	126	3.02	1.02	

Table III-16

DEMOGRAPHIC CHARACTERISTICS

	Number of Families	FOCAL CHILDREN								SIBLINGS									TOTAL of Focal & Sibs	Average number of Focal & Sibs per family
		Number of focal children	Ages (years)[1] 3½	4	4½	5	5½	Sex M	F	Number of siblings	Ages (years)[1] 3½	4	4½	5	5½	6	Sex M	F		
Huntsville, Alabama																				
Home Start	36	36	0	0	9	22	5	19	17	7	2	2	0	0	0	3	3	4	43	1.19
Control	30	30	0	0	6	17	7	13	17	8	0	4	2	0	0	2	4	4	38	1.27
Head Start	24	24	1	6	8	5	4	11	13										24	1.00
Total Sample	90	90	1	6	23	44	16	43	47	15	2	6	2	0	0	5	7	8	105	1.17
Dardanelle, Arkansas																				
Home Start	39	39	1	7	7	13	8	22	17	4	2	2	0	0	0	0	4	0	43	1.10
Control	23	23	1	3	9	6	3	13	10										23	1.00
Head Start	27	27	2	11	7	2	5	20	7										27	1.00
Total Sample	89	89	4	21	23	21	16	55	34	4	2	2	0	0	0	0	4	0	93	1.04
Wichita, Kansas																				
Home Start	28	28	5	13	7	2	0	10	18	7	1	2	0	2	1	1	3	4	35	1.25
Control	21	21	3	5	9	3	1	8	13	2	0	0	0	1	0	1	2	0	23	1.10
Total Sample	49	49	8	18	16	5	1	18	31	9	1	2	0	3	1	2	5	4	58	1.18
Cleveland, Ohio																				
Home Start	32	32	12	13	7	0	0	12	20	5	0	0	0	1	2	2	2	3	37	1.16
Control	11	11	2	4	4	1	0	4	7										11	1.00
Total Sample	43	43	14	17	11	1	0	16	27	5	0	0	0	1	2	2	2	3	48	1.12
Houston, Texas																				
Home Start	27	21	7	8	8	2	2	15	12	6	0	0	0	1	2	3	3	3	33	1.22
Control	11	11	2	2	3	2	1	8	3	2	0	1	0	0	0	1	1	1	13	1.18
Head Start	31	31	0	12	11	7	1	15	16										31	1.00
Total Sample	69	69	9	22	22	11	4	38	31	8	0	1	0	1	2	4	4	4	77	1.12
Parkersburg, West Virginia																				
Home Start	30	30	5	3	6	10	5	14	16	7	2	0	2	0	1	2	4	3	37	1.23
Control	34	34	1	12	12	7	2	20	14	8	4	1	0	0	2	1	4	4	42	1.24
Head Start	30	30	2	8	15	5	0	17	13										30	1.00
Total Sample	94	94	8	23	33	22	7	51	43	15	6	1	2	0	3	3	8	7	109	1.16
Total Sample																				
Home Start	192	192	30	44	44	49	20	92	100	36	7	6	2	4	6	11	19	17	228	1.19
Control	130	130	9	26	43	36	14	66	64	20	4	6	2	1	2	5	11	9	150	1.15
Head Start	112	112	5	37	41	19	10	63	49										112	1.00
Total Sample	434	434	44	107	128	104	44	221	213	56	11	12	4	5	8	16	30	26	490	1.13

[1] Intervals include 2 months before and 3 months after indicated date (except 3 1/2-year-old category which starts at 38 months and 5 1/2-year-old category which includes 70 months). Seven focal children with ages below 38 months or above 70 months were excluded from the sample for analysis dealing with age.

Table III-18 EMPLOYMENT AND EDUCATION PATTERNS

	N	Unemployment rate (no family members employed)	At least two family members employed	Mother Employed[1]	Mother is sole supporter[1]	Occupational Level[2] (median)	Mother's[1 3] Education (mean)	SES Index[4] (mean)
ALABAMA								
Home Start	36	19.4	19.4	36.4	18.2	15	10.0	5.0
Control	30	23.3	26.7	42.9	14.3	8.5	9.6	4.7
Head Start	24	29.2	16.7	45.5	27.3	16.5	9.9	5.1
Total Sample	90	23.3	21.1	41.0	19.3	16	9.8	4.9
ARKANSAS								
Home Start	39	17.9	17.9	22.2	5.6	8	9.5	4.6
Control	23	8.7	21.7	22.7	4.5	14	10.4	5.0
Head Start	27	3.7	37.0	85.2	48.1	24	11.8	6.8
Total Sample	89	11.2	24.7	42.4	18.8	9	10.5	5.4
KANSAS								
Home Start	28	53.6	17.9	29.6	11.1	1	10.1	4.9
Control	20	65.0	5.0	20.0	15.0	1	10.4	4.7
Total Sample	48	58.3	12.5	25.5	12.8	1	10.3	4.8
OHIO								
Home Start	32	90.6	3.1	3.2	0	1	10.4	4.3
Control	11	81.8	0	11.1	11.1	1	10.2	4.2
Total Sample	43	88.4	2.3	5.0	2.5	1	10.4	4.3
TEXAS								
Home Start	27	33.3	3.7	16.7	12.5	9	9.1	4.5
Control	11	18.2	18.2	27.3	9.1	16	10.2	5.0
Head Start	31	19.4	19.4	73.3	56.7	22	11.6	6.4
Total Sample	69	24.6	13.0	44.6	32.3	15	10.5	5.5
WEST VIRGINIA								
Home Start	30	26.7	3.3	6.9	3.4	8.5	9.2	4.5
Control	34	26.5	0	0	0	9	9.7	4.6
Head Start	30	16.7	33.3	64.3	28.6	15.5	10.8	5.5
Total Sample	94	23.4	11.7	22.2	10.0	9	9.9	4.8
TOTAL								
Home Start	192	39.1	11.5	19.4	8.3	7	9.8	4.6
Control	129	32.6	12.4	20.3	8.1	8	10.0	4.7
Head Start	112	17.0	26.8	68.2	41.1	17	11.1	6.0
Total Sample	433	31.4	15.7	32.4	16.8	11	10.2	5.0

[1] The N for items requiring the mother's response is somewhat less than the total number of respondents since, overall, 5.5% of the interviews were completed by someone other than the mother; the total number of mothers responding was 410.

[2] Occupational level of the highest status wage earner in family. Levels are based upon Duncan's socio-economic index (Reiss, Duncan, Hatt and North, 1961). Possible range of levels is 1 to 96. Examples: level 1 unemployed dyers and fruit packers; level 7, machinists, engravers, and construction workers; level 15, truck drivers, roofers and dry cleaners; level 25, auto mechanics, stonecutters and plasterers.

[3] Number of years completed.

[4] SES is based on mother's education and highest occupational level in household.

Table III-19

TESTING TIMES

Measures	N	Mean (minutes)	(Fall Mean)	SD	Maximum
Child Measures					
PSI					
Home Start	258	12.6	(13.8)	6.45	82.0
Control	119	12.6	(13.5)	3.18	18.0
Head Start	57	12.4	(12.0)	4.55	25.0
Total Sample	434	12.6	(13.3)	5.66	82.0
DDST					
Home Start	256	19.0	(21.7)	5.76	47.0
Control	118	18.6	(20.0)	5.46	37.0
Head Start	57	19.2	(16.9)	10.73	90.0
Total Sample	431	18.9	(20.0)	6.54	90.0
HEIGHT AND WEIGHT					
Home Start	252	2.9	(3.7)	1.48	9.0
Control	116	2.7	(3.3)	1.44	10.0
Head Start	56	2.9	(2.6)	1.64	9.0
Total Sample	424	2.8	(3.3)	1.49	10.0
TOTAL CHILD TIME					
Home Start		34.5	(40.2)		
Control		33.9	(36.8)		
Head Start		34.5	(30.5)		
Total Sample		34.3	(36.6)		
Parent Questionnaires					
SBI					
Home Start	254	5.1	(6.7)	2.47	15.0
Control	118	6.0	(6.4)	3.18	18.0
Head Start	57	6.1	(5.1)	3.59	20.0
Total Sample	429	5.4	(6.2)	2.87	20.0
HES					
Home Start	258	6.9	(8.1)	2.51	20.0
Control	119	7.6	(7.5)	2.87	20.0
Head Start	57	6.6	(6.3)	2.33	15.0
Total Sample	434	7.0	(7.5)	2.85	26.0
PARENT INTERVIEW					
Home Start	254	13.9	(14.6)	4.77	35.0
Control	117	14.3	(11.6)	5.20	35.0
Head Start	55	13.1	(14.5)	4.29	25.0
Total Sample	426	13.9	(13.7)	4.84	35.0

(Continued)

Table III-19

TESTING TIMES
(Continued)

Measures	N	Mean (minutes)	(Fall Mean)	SD	Maximum
Parent Questionnaires (continued)					
FOOD INTAKE					
Home Start	249	7.4	(8.3)	3.34	29.0
Control	116	7.3	(7.7)	2.55	15.0
Head Start	55	7.1	(6.5)	3.25	21.0
Total Sample	420	7.3	(7.7)	3.13	29.0
TOTAL PARENT TIME					
Home Start		33.3	(37.7)		
Control		35.2	(32.2)		
Head Start		32.9	(32.4)		
Total Sample		33.6	(35.1)		
Parent-Child Interaction					
8-BLOCK					
Home Start	252	21.1	(21.8)	7.84	78.0
Control	118	21.8	(21.0)	11.95	110.0
Head Start	56	21.2	(19.9)	7.20	40.0
Total Sample	426	21.3	(21.1)	9.08	110.0
TOTAL BATTERY TIME					
Home Start		88.9	(99.7)		
Control		90.9	(90.0)		
Head Start		88.6	(82.8)		
Total Sample		89.2	(92.8)		

Table III-20

REASONS FOR MISSING DATA

	Number of Instruments Administered		Number of instruments with missing data		Interviewer's Comments								Unknown Reasons	
					Child Refusal		Tester Error		Uncontrollable Circumstances		Language Difficulties			
	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Child Measures														
PSI														
Home Start	251	192	69	30	67	29	0	1	0	0	2	0	0	0
Control	162	130	43	27	40	27	1	0	2	0	0	0	0	0
Head Start	143	112	21	12	21	12	0	0	0	0	0	0	0	0
Total Sample	556	434	133	69	128	68	1	1	2	0	2	0	0	0
DDST														
Home Start	251	192	30	23	27	22	2	1	1	0			0	0
Control	162	130	23	12	23	11	0	1	0	0			0	0
Head Start	141	112	16	10	14	10	0	0	0	0			2	0
Total Sample	554	434	69	45	64	43	2	2	1	0			2	0
HEIGHT AND WEIGHT														
Home Start	251	192	8	0	8	0	0	0					0	0
Control	160	130	5	1	2	1	1	0					2	0
Head Start	142	111	1	1	0	0	0	0					1	1
Total Sample	553	433	14	2	10	1	1	0					3	1
POCL														
Home Start	251	191	2	14									2	14
Control	160	129	4	7									4	7
Head Start	141	112	2	1									2	1
Total Sample	552	432	8	22									8	22
Parent Questionnaire														
SBI														
Home Start	251	192	2	0	0	0	2	0	0	0	0	0	0	0
Control	162	129	4	1	0	0	4	0	0	0	0	0	0	1
Head Start	142	112	4	0	0	0	3	0	0	0	0	0	1	0
Total Sample	555	433	10	1	0	0	9	0	0	0	0	0	1	1

(Continued)

Table III-20

REASONS FOR MISSING DATA
(Continued)

	Number of Instruments Administered		Number of instruments with missing data		Interviewer's Comments								Unknown Reasons	
					Child Refusal		Tester Error		Uncontrollable Circumstances		Language Difficulties			
	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Parent Questionnaires (Continued)														
HES														
Home Start	251	192	0	0			0	0	0	0			0	0
Control	162	130	2	0			2	0	0	0			0	0
Head Start	142	112	8	0			5	0	2	0			1	0
Total Sample	555	434	10	0			7	0	2	0			1	0
PARENT INTERVIEW														
Home Start	251	192	29	1			29	1		0			0	0
Control	160	130	2	1			0	0		1			2	0
Head Start	142	112	4	0			3	0		0			1	0
Total Sample	553	434	35	2			32	1		1			3	0
FOOD INTAKE														
Home Start	251	192	2	0	1	0	0	0	1	0			0	0
Control	162	130	0	0	0	0	0	1	0	0			0	0
Head Start	142	112	1	3	0	0	0	1	0	2			1	0
Total Sample	555	434	3	3	1	0	0	2	1	2			1	0
Parent-Child Interaction														
8-BLOCK														
Home Start	251	192	26	9	22	8	2	0	2	1			0	0
Control	160	130	28	6	19	6	2	0	5	0			2	0
Head Start	142	111	24	8	17	7	4	0	2	0			1	1
Total Sample	553	433	68	23	58	21	8	0	9	1			3	1
TOTAL														
Home Start	2259	1727	168	77	125	59	35	3	4	1	2	0	2	14
Control	1450	1168	111	55	84	45	10	1	7	1	0	0	10	8
Head Start	1277	1006	81	35	52	29	15	1	4	2	0	0	10	3
Total Sample	4986	3901	348	167	261	133	60	5	15	4	2	0	22	25

Table III-21
PARENTAL REACTIONS TO TESTING

	Spring	Percent Liked		What parents didn't like (frequency)							
				Nothing Specific		Too Difficult		Too Much Time		Other*	
	N	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Child Measures											
DDST											
Home Start	181	97.9	98.9	1	0	3	1			0	1
Control	123	97.7	96.7	1	0	2	4			0	0
Head Start	72	95.0	98.6	0	0	3	0			0	1
Total Sample	376	97.4	98.1	2	0	8	5			0	2
PSI											
Home Start	181	96.8	98.9	1	1	6	1			0	0
Control	121	96.9	97.5	0	0	5	3			0	0
Head Start	72	98.3	97.2	0	1	1	0			0	1
Total Sample	373	97.0	98.1	1	2	12	4			0	1
HEIGHT AND WEIGHT											
Home Start	180	99.4	99.4	1	1					0	0
Control	120	100.0	100.0	0	0					0	0
Head Start	71	100.0	98.6	0	0					0	1
Total Sample	371	99.7	99.5	1	1					0	1
8-BLOCK											
Home Start	183	84.5	95.1	3	1	7	3	1	0	2	5
Control	127	97.7	96.1	1	0	1	2	1	0	1	3
Head Start	98	94.7	92.1	0	1	2	3	0	0	1	3
Total Sample	408	95.6	94.9	4	2	10	8	2	0	4	11
Parent Questionnaires											
SBI											
Home Start	182	98.7	99.5	1	0					1	1
Control	126	100.0	99.2	0	0					0	1
Head Start	109	98.9	99.1	0	0					1	1
Total Sample	417	99.2	99.3	1	0					2	3
FOOD INTAKE											
Home Start	183	99.3	98.9	0	1	1	0			0	2
Control	128	100.0	96.1	0	0	0	0			0	4
Head Start	109	96.8	97.2	2	1	0	0			0	2
Total Sample	420	98.8	97.6	2	2	1	0			0	8
HES											
Home Start	183	99.3	98.9							1	2
Control	127	100.0	99.2							0	1
Head Start	109	100.0	99.1							0	1
Total Sample	419	99.7	99.0							1	4
PARENT INTERVIEW											
Home Start	185	96.7	97.3	3	1					3	4
Control	127	99.1	96.1	0	1					1	4
Head Start	109	95.8	98.2	0	0					4	2
Total Sample	421	97.3	97.1	3	2					8	10

*Other includes responses such as "too personal" and "too limited".

Table III-22

CONDITIONS OF TESTING SUMMARIZED OVER ALL MEASURES

	Group	Log 1	Logs 2 & 3	Spring Mean	Fall Mean
Percent of testing sessions where mother was present	Home Start	89.5%	93.4%	91.3%	94.0%
	Control	91.2	93.7	92.3	92.4
	Head Start	48.6	82.2	60.7	71.0
	Total Sample	79.8	91.6	84.9	89.4
Percent of testing sessions where Home Visitor or teacher was present	Home Start	57.9	45.2	52.0	57.2
	Control	46.0	51.0	48.2	50.2
	Head Start	15.0	5.3	11.6	11.9
	Total Sample	43.5	39.9	41.9	46.8
Mean number of people in the room	Home Start	5.4	5.3	5.3	5.1
	Control	5.7	5.3	5.5	4.9
	Head Start	3.8	3.4	3.6	4.1
	Total Sample	5.1	4.9	5.0	4.9
Percent of testing sessions rated noisy	Home Start	24.2	27.5	25.8	24.2
	Control	22.2	26.0	23.9	23.3
	Head Start	35.5	15.5	28.5	39.7
	Total Sample	26.5	24.9	25.8	26.7
Percent of testing sessions where tester had difficulties	Home Start	15.6	20.0	17.7	28.4
	Control	22.2	12.5	18.0	22.0
	Head Start	15.4	8.8	13.0	23.3
	Total Sample	17.5	15.7	16.8	25.5
		Log 1	Logs 2 & 3	% of total	Fall
Frequency of testing done at:					
Center	Home Start	1	37	.3	1.8
	Control	0	0	0	.7
	Head Start	95	37	80.5	88.6
	Total Sample	96	74	17.9	17.1
Home	Home Start	189	169	99.7	98.2
	Control	125	96	100.0	99.3
	Head Start	8	20	17.1	11.4
	Total Sample	322	285	81.6	82.9

(Continued)

Table III-22

CONDITIONS OF TESTING SUMMARIZED OVER ALL MEASURES
(Continued)

	Group	Log 1	Logs 2 & 3	% of total	Fall
Frequency of testing in each location:					
Living Room	Home Start	125	92	61.1	62.9
	Control	95	58	68.9	62.9
	Head Start	5	15	12.2	6.8
	Total Sample	225	165	52.6	52.7
Dining Room	Home Start	8	11	5.4	2.6
	Control	6	6	5.4	2.4
	Head Start	7	3	6.1	7.4
	Total Sample	21	20	5.5	3.4
Kitchen	Home Start	17	24	8.7	14.6
	Control	5	14	6.8	10.2
	Head Start	0	10	0	2.8
	Total Sample	22	0	6.2	11.1
Living Room plus another room	Home Start	30	43	20.6	16.8
	Control	12	18	13.5	20.1
	Head Start	2	4	3.7	1.1
	Total Sample	44	65	14.7	15.0
Other[1]	Home Start	9	6	4.2	3.2
	Control	8	4	5.4	4.8
	Head Start	94	36	79.3	81.8
	Total Sample	109	46	20.9	17.8
Frequency of testing done on:					
Large Table	Home Start	20	17	10.5	19.2
	Control	10	9	8.6	11.0
	Head Start	15	6	12.8	11.7
	Total Sample	45	32	10.4	15.4

(Continued)

Table I I-22

CONDITIONS OF TESTING SUMMARIZED OVER ALL MEASURES
(Continued)

	Group	Log 1	Logs 2 & 3	% of total	Fall
Frequency of testing done on: (continued)					
Child-sized Table	Home Start	16	12	7.9	5.5
	Control	9	12	9.5	3.8
	Head Start	26	19	27.4	40.9
	Total Sample	51	43	12.7	11.3
Floor	Home Start	59	30	25.1	17.4
	Control	45	20	29.4	18.9
	Head Start	12	10	13.4	6.4
	Total Sample	116	60	23.8	16.9
Couch	Home Start	6	3	2.5	5.7
	Control	3	0	1.4	3.4
	Head Start	0	3	1.8	1.8
	Total Sample	9	6	2.0	4.3
Large table and floor	Home Start	20	28	13.6	17.0
	Control	11	15	11.8	20.6
	Head Start	3	3	3.7	7.6
	Total Sample	34	46	10.8	16.4
Child-sized table and floor	Home Start	4	20	6.8	4.3
	Control	7	8	6.8	5.8
	Head Start	5	1	3.7	18.7
	Total Sample	16	29	6.1	7.3
Floor and chair	Home Start	8	2	2.8	4.3
	Control	4	3	3.2	6.9
	Head Start	0	0	0	1.0
	Total Sample	12	5	2.3	4.4
Floor and couch	Home Start	24	13	10.5	12.1
	Control	10	6	7.2	12.7
	Head Start	1	1	1.2	1.0
	Total Sample	35	20	7.4	10.2

(Continued)

Table III-22

CONDITIONS OF TESTING SUMMARIZED OVER ALL MEASURES
(Continued)

	Group	Log 1	Logs 2 & 3	% of total	Fall
Frequency of testing done on: (continued)					
Child-sized table and chair[2]	Home Start	7	7	4.0	4.3
	Control	7	5	5.4	3.4
	Head Start	39	6	27.4	7.6
	Total Sample	53	18	9.6	4.6
Large table and other[2]	Home Start	9	19	7.9	5.5
	Control	6	11	7.7	5.1
	Head Start	1	1	1.2	2.3
	Total Sample	16	31	6.4	4.9
Other[3]	Home Start	13	14	7.6	4.5
	Control	12	6	8.1	3.4
	Head Start	5	4	5.5	1.8
	Total Sample	30	24	7.3	4.1

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[1] Example of "other" include Head Start Center, dining room and kitchen, and hallway.

[2] Examples of "other" include chairs and couches.

[3] Examples of "other" include bed, chair, floor and bed.

Table IV-1

PRESCHOOL INVENTORY ITEMS

1 What is your first name?
2 Show me your shoulder.
3 What is this (knee)?
4 What is this (elbow)?
5 Put the yellow car on the little box.
6 Put the blue car under the green box.
7 Put 2 cars behind the box in the middle.
8 If you were sick, who would you go to?
9 When do we eat breakfast?
10 If you wanted to find a lion where would you look?
11 What does a dentist do?
12 Which way does a phonograph record go?
13 Which way does a ferris wheel go?
14 How many hands do you have?
15 How many wheels does a bicycle have?
16 How many wheels does a car have?
17 How many toes do you have?
18 Which is slower, a car or a bicycle?
19 Point to the middle one.
20 Point to the first one.
21 Point to the last one.
22 Point to the second one.
23 Which of these 2 groups has less checkers in it?
24 Which of these 2 groups has more checkers in it?
25 Point to the one that is most like a tent.
26 Make one like this (square).
27 Make one like this (triangle).
28 Which one is the color of night?
29 Color the square.
30 Color the square purple.
31 Color the triangle.
32 Color the triangle orange.

Table IV-2

PRESCHOOL INVENTORY
PERCENT RESPONSES IN EACH SCORING CATEGORY

Item[2]	N	Response Category[1]					
		C	W	DK	R	NR	V
1	365	86.8	5.8	3.3	.8	3.3	95.9
2	365	74.0	14.5	3.8	1.4	6.3	26.8
3	365	81.1	10.7	4.4	.3	3.6	96.4
4	365	60.3	26.3	7.4	.3	5.8	93.2
5	365	48.5	46.3	1.1	1.1	3.0	34.5
6	365	32.6	65.5	.8	.5	.5	30.1
7	365	11.5	85.5	1.1	.5	1.4	26.8
8	365	58.4	27.1	4.1	2.7	7.7	94.8
9	365	46.6	40.5	5.8	2.2	4.9	94.8
10	363	18.2	56.2	11.8	4.7	9.1	94.5
11	365	57.8	21.1	9.6	6.6	4.9	94.0
12	365	32.6	50.1	8.2	2.5	6.6	89.6
13	365	20.5	58.4	11.0	3.6	6.6	85.8
14	365	56.7	40.5	1.1	.3	1.4	97.0
15	364	56.3	40.1	1.6	1.6	.3	98.4
16	364	33.5	60.4	2.7	1.9	1.4	96.4
17	365	9.9	83.0	3.6	2.2	1.4	96.7
18	364	61.3	35.2	1.9	1.1	.5	98.9
19	365	53.7	44.1	.3	1.4	.5	25.2
20	365	38.1	60.3	--	.8	.8	13.7
21	365	43.3	55.3	.3	.8	.3	13.2
22	365	38.6	60.5	--	.5	.3	11.2
23	364	27.7	67.9	3.0	1.1	.3	41.1†
24	365	3.0	93.2	2.2	1.1	.5	36.4
25	365	66.8	31.8	.5	.8	--	26.3
26	364	37.4	58.8	1.9	1.1	.8	29.1
27	364	20.9	74.7	1.4	1.6	1.4	30.2
28	365	56.7	42.7	--	.3	.3	38.4
29	365	38.6	58.4	1.4	.8	.8	38.4
30	365	52.1	44.7	1.1	1.1	1.1	29.0
31	365	52.9	45.5	.5	.5	.5	34.8
32	365	66.0	32.1	.3	.8	.8	26.3

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[1] Code:
C = Correct
W = Wrong
DK = Don't Know
R = Refusal
NR = No Response
V = Verbal

[2] See key to items.

† Based on N of 365

Table IV-5

PRESCHOOL INVENTORY: PERCENT PASSING BY GROUP

Item[1]	Group			Total Sample N=363-365
	Home Start N=162-163	Control N=102	Head Start N=99-100	
1	83.4	87.3	92.0	86.8
2	72.4	71.6	79.0	74.0
3	77.9	81.4	86.0	81.1
4	59.5	57.8	64.0	60.3
5	51.5	36.3	56.0	48.5
6	35.6	28.4	32.0	32.6
7	14.7	9.8	8.0	11.5
8	62.6	50.0	60.0	58.4
9	47.2	52.9	39.0	46.6
10	20.4	12.7	20.2	18.2
11	65.0	40.2	64.0	57.8
12	35.0	19.6	42.0	32.6
13	20.9	17.6	23.0	20.5
14	62.0	54.9	50.0	56.7
15	54.0	59.8	56.6	56.3
16	38.3	29.4	30.0	33.5
17	14.7	3.9	8.0	9.9
18	65.4	59.8	56.0	61.3
19	52.1	52.0	58.0	53.7
20	37.4	47.1	30.0	38.1
21	44.2	38.2	47.0	43.3
22	38.0	35.3	43.0	38.6
23	26.5	21.6	36.0	27.7
24	3.1	2.0	4.0	3.0
25	65.6	71.6	64.0	66.8
26	31.9	36.3	47.5	37.4
27	19.6	19.6	24.2	20.9
28	55.8	55.9	59.0	56.7
29	46.0	21.6	44.0	38.6
30	52.1	42.2	62.0	52.1
31	52.2	48.0	54.0	52.9
32	68.7	54.9	73.0	66.0

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[1] See key to items.

Table IV-6

PRESCHOOL INVENTORY: PERCENT PASSING BY AGE

Item[2]	Age[1]					All Ages
	3 1/2	4	4 1/2	5	5 1/2	
	N=31-32	N=81	N=105-106	N=95-96	N=43-44	N=357-359
1	84.4	90.1	84.9	88.5	81.8	86.6
2	62.5	71.6	67.0	79.2	88.6	73.5
3	75.0	71.6	82.1	82.3	95.5	80.8
4	50.0	48.1	65.1	63.5	68.2	59.9
5	15.6	38.3	50.9	55.2	65.9	47.9
6	12.5	18.5	34.0	40.6	52.3	32.6
7	0.0	3.7	9.4	18.7	18.2	10.9
8	53.1	56.8	54.7	63.5	59.1	57.9
9	25.0	29.6	46.2	58.3	63.6	46.0
10	0.0	8.6	20.0	24.2	27.3	17.6
11	40.6	50.6	58.5	66.7	61.4	57.7
12	21.9	24.7	29.2	39.6	43.2	32.0
13	9.4	14.8	21.7	24.0	29.5	20.6
14	46.9	46.9	59.4	59.4	68.2	56.5
15	15.6	43.2	62.3	64.6	79.1	56.4
16	28.1	18.5	31.4	35.4	61.4	33.0
17	3.1	3.7	9.4	12.5	15.9	9.2
18	51.6	55.6	58.5	70.8	63.6	61.2
19	12.5	34.6	54.7	67.7	81.8	53.2
20	28.1	29.6	32.1	47.9	47.7	37.3
21	21.9	39.5	47.2	41.7	54.5	42.6
22	18.8	40.7	38.7	44.8	34.1	38.4
23	15.6	22.2	26.4	41.7	23.3	28.2
24	3.1	0.0	1.9	2.1	13.6	3.1
25	46.9	65.4	65.1	75.0	70.5	66.9
26	3.1	23.5	37.1	47.9	61.4	36.9
27	0.0	9.9	19.0	25.0	47.7	20.4
28	46.9	40.7	60.4	64.6	63.6	56.3
29	15.6	38.3	35.8	49.0	36.4	38.2
30	25.0	44.4	59.4	52.1	63.6	51.5
31	37.5	42.0	53.8	64.6	52.3	52.4
32	43.8	59.3	72.6	65.6	77.3	65.7

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[1] Age intervals: 3 1/2 (38-45 months); 4 (46-51) months); 4 1/2 (52-57 months); 5 (58-63 months); 5 1/2 (64-70 months); seven children with ages below 38 months or above 70 months were excluded from the total sample for this analysis.

[2] See key to items.

Table IV-7

PRESCHOOL INVENTORY
INTERITEM AND ITEM-TOTAL CORRELATIONS
(Item N's range from 363 to 365)

Item[1]	TOTAL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	12																															
2	30	12																														
3	32	01	27																													
4	41	09	18	29																												
5	51	-07	17	17	30																											
6	46	02	09	14	24	41																										
7	28	03	11	10	13	14	18																									
8	26	06	18	10	12	14	12	06																								
9	36	02	14	10	12	13	21	12	16																							
10	50	07	16	17	23	27	26	14	16	21																						
11	36	02	15	11	27	24	25	11	21	17	25																					
12	30	06	18	11	09	16	10	06	20	12	24	22																				
13	32	13	14	14	14	14	12	-01	12	15	25	18	38																			
14	31	05	06	15	19	17	20	10	03	13	16	09	00	15																		
15	28	00	01	12	16	25	17	04	09	13	12	07	01	10	21																	
16	40	-01	13	20	22	18	22	16	07	24	25	14	13	11	12	09																
17	33	02	15	11	08	12	14	11	11	17	27	11	14	10	04	10	23															
18	18	04	04	03	09	11	14	07	06	15	15	16	-04	05	17	09	07	01														
19	54	02	20	18	26	37	35	17	14	19	24	19	14	11	24	26	27	19	15													
20	23	03	02	00	02	11	11	12	17	12	26	09	12	15	07	09	16	21	00	26												
21	26	01	10	12	13	14	14	11	06	10	09	07	06	04	08	13	20	17	01	43	-04											
22	02	04	00	08	-09	-01	01	03	-07	-07	04	-05	02	-02	-04	01	-03	11	01	00	-19	13										
23	15	02	03	06	06	12	05	00	01	05	07	12	13	03	18	06	00	00	08	09	-04	01	07									
24	12	06	03	08	01	05	04	03	01	09	04	02	11	-01	02	00	04	15	04	06	12	00	-04	04								
25	19	01	07	09	09	15	03	03	08	12	15	03	03	19	06	10	10	09	06	09	12	01	-01	-04	02							
26	50	09	18	19	20	31	29	21	08	19	20	07	11	12	18	19	31	14	11	41	17	19	11	04	12	08						
27	43	08	12	14	16	23	20	17	11	18	24	12	10	15	16	17	25	19	02	27	19	05	05	04	10	14	45					
28	37	05	09	14	20	15	19	12	20	19	23	17	17	15	18	04	16	06	09	18	07	08	10	09	05	08	21	13				
29	42	14	16	12	17	25	20	19	04	11	31	16	16	13	12	02	22	19	05	12	16	09	09	14	09	10	21	24	17			
30	49	04	13	15	30	43	33	15	16	22	26	19	15	16	19	22	18	18	04	25	06	10	-06	11	10	10	29	31	21	24		
31	40	13	14	11	13	23	19	09	07	15	24	13	14	14	08	03	19	12	09	24	10	11	07	05	-02	05	29	18	21	44	24	
32	41	01	12	12	25	37	27	16	07	17	21	20	09	10	12	13	19	15	00	26	07	10	04	01	05	06	22	22	17	22	41	28

[1] See key to items

Table IV-8
PRESCHOOL INVENTORY
ROTATED FACTOR LOADINGS[1]
ELEVEN FACTORS EXTRACTED

(Item Ns range from 463 to 465)

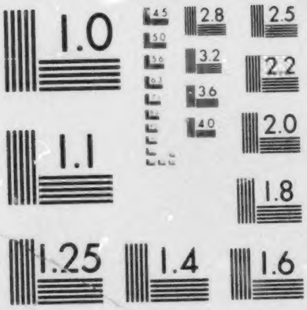
Item[2]	FI	FII	FIII	FIV	FV	FVI	FVII	FVIII	FIX	FX	FXI	h^2
1	-08	05	17	01	05	04	-01	08	01	00	33	76
2	04	17	07	13	06	-16	00	58	11	01	22	49
3	07	06	02	09	09	15	-12	72	00	10	-07	62
4	40	03	04	06	-14	13	-01	52	14	-16	06	52
5	71	11	08	16	-01	08	-05	07	09	-02	-07	58
6	51	00	16	24	00	08	06	01	28	-07	-01	45
7	11	-23	30	17	16	-07	10	18	23	-10	01	33
8	17	31	-18	09	08	-28	-05	10	41	-10	23	51
9	10	03	12	09	18	02	-17	12	48	-13	-12	38
10	19	32	36	09	08	03	-21	03	34	-01	-06	46
11	29	32	05	01	-07	-03	20	11	48	-09	-02	50
12	06	75	12	06	15	-02	10	12	02	00	-01	65
13	04	64	11	03	-11	14	-34	11	03	-08	11	62
14	12	-01	04	13	-01	66	-13	12	17	-12	02	55
15	39	03	-28	33	03	28	-34	-07	01	03	06	55
16	02	01	40	32	09	03	-13	31	12	-21	-34	58
17	09	18	15	26	46	-23	-18	00	16	15	-14	52
18	-03	-18	01	04	-05	28	-08	-08	68	06	12	64
19	29	07	09	71	05	15	-01	07	14	-14	04	69
20	00	23	22	20	30	-04	-20	-24	08	-54	02	64
21	04	05	00	76	-05	-05	10	12	03	20	-03	67
22	-0	-01	15	14	06	-01	-07	-03	-01	83	02	76
23	09	27	03	-06	13	60	32	-02	07	21	-05	64
24	05	00	-06	-10	79	07	10	08	04	-03	07	69
25	08	07	01	-09	-01	-03	-73	08	13	02	-02	59
26	26	-10	34	41	24	19	-17	17	-01	-04	14	56
27	30	00	30	15	33	13	-32	09	-07	-08	09	48
28	13	15	24	00	00	12	-05	18	37	13	00	31
29	21	15	69	-03	08	07	00	04	05	07	08	59
30	72	07	12	-01	14	06	-07	12	05	-02	04	61
31	24	09	67	11	-15	00	00	-01	06	06	16	59
32	66	-01	25	02	02	-12	00	10	02	03	-04	55
PCT. V	8.3	5.3	6.4	5.9	4.2	4.3	4.2	4.9	5.4	4.2	3.5	

Eleven factors accounted for 56.5% of the total variance.

---

[1] Principal components factor analysis followed by a varimax rotation.

[2] See key to items.


1.0
4.5
5.0
5.6
6.3
7.1
8.0
9.0
10.0
2.8
3.2
3.6
4.0
2.5
2.2
2.0
1.1
1.8
1.25
1.4
1.6

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Table IV-9

PRESCHOOL INVENTORY
ITEMS LOADING HIGHEST ON EACH FACTOR
(continued)

		Loading
FACTOR VI (4.2%)		
14.	How many hands do you have?	.66
23.	Which one of these 2 groups has less checkers in it?	.60*
FACTOR VII (4.2%)		
25.	Point to the one that is most like a tent.	.73
13.	Which way does a ferris wheel go?	.34*
15.	How many wheels does a bicycle have?	.34*
23.	Which one of these 2 groups has less checkers in it?	.32*
27.	Make one like this (triangle).	.32*
FACTOR VIII (4.9%)		
3.	What is this (knee)?	.72
2.	Show me your shoulder.	.58
4.	What is this (elbow)?	.52*
16.	How many wheels does a car have?	.31*
FACTOR IX (5.3%)		
18.	Which is slower, a car or a bicycle?	.68
11.	What does a dentist do?	.48*
9.	When do we eat breakfast?	.48
8.	If you were sick, who would you go to?	.41*
28.	Which one is the color of night?	.37
10.	If you wanted to find a lion, where would you look?	.34*
FACTOR X (4.1%)		
22.	Point to the second one.	.83
20.	Point to the first one.	-.54
FACTOR XI (3.5%)		
1.	What is your first name?	.83
16.	How many wheels does a car have?	.34*

Eleven factors accounted for 56.5% of the total variance.

---

* Item also shows substantial loading on another factor.

Table IV-11

DESCRIPTIVE DATA

	PRESCHOOL INVENTORY[1] (possible range=1-32)				8-BLOCK SCORE[2] (possible range=0-8)			
	N	Mean	SD	SE	N	Mean	SD	SE
AGE:[3]								
3 1/2	32	9.1	3.6	.6	36	2.9	1.6	.27
4	81	11.9	4.2	.46	95	3.4	1.5	.16
4 1/2	106	14.5	5.7	.55	118	4.1	2.0	.19
5	96	16.4	5.4	.55	97	4.8	2.0	.20
5 1/2	44	17.7	6.0	.91	43	5.4	2.0	.31
TOTAL	359	14.3	5.8	.30	389	4.1	2.0	.10
SEX:								
M	190	14.0	5.9	.43	198	4.1	2.0	.14
F	175	14.9	5.6	.43	198	4.2	2.0	.14
TOTAL	365	14.4	5.8	.30	396	4.1	2.0	.10

[1] A total score based on 32-item PSI was excluded from this analysis if the child had 27 or fewer valid responses.

[2] Only children with all four responses were included in this analysis.

[3] Age intervals: 3 1/2 (38-45 months); 4 (46-51 months); 4 1/2 (52-57 months); 5 (58-63 months); 5 1/2 (64-70 months); seven children with ages below 38 months or above 70 months were excluded from the total sample for this analysis.

Table IV-12

INSTRUMENT RELIABILITY BY GROUP FOR SIX-SITE AND FOUR-SITE SAMPLES

Instrument or Scale	Reliability	Six-Site Sample		Four-Site Sample		Total Sample
		Home Start	Control Group	Home Start	Head Start	
PSI	Test-retest	.70	.70	.67	.71	.68
	Alpha-fall	.81	.64	.82	.80	.77
	Alpha-spring	.86	.77	.86	.82	.83
DDST: Language	Test-retest	.74	.76	.75	.80	.76
	Alpha-fall	.85	.80	.85	.82	.83
	Alpha-spring	.85	.80	.87	.83	.83
DDST: Fine Motor	Test-retest	.71	.68	.74	.60	.68
	Alpha-fall	.78	.64	.78	.66	.72
	Alpha-spring	.66	.64	.66	.62	.65
DDST: Gross Motor	Test-retest	.57	.53	.58	.55	.55
	Alpha-fall	.61	.54	.61	.64	.60
	Alpha-spring	.58	.49	.58	.58	.55
DDST: Personal-Social	Test-retest	.37	.18	.24	.45	.34
	Alpha-fall	.46	.46	.44	.57	.42
	Alpha-spring	.43	.31	.40	.50	.42
HES; Playthings	Test-retest	.42	.53	.47	.51	.48
	Alpha-fall	.53	.50	.52	.44	.51
	Alpha-spring	.59	.57	.55	.44	.58
HES: Mother Teaches	Test-retest	.39	.56	.37	.55	.49
	Alpha-fall	.71	.74	.68	.53	.69
	Alpha-spring	.63	.75	.63	.68	.69
HES: Household Tasks	Test-retest	.50	.56	.58	.58	.54
	Alpha-fall	.38	.45	.37	.31	.39
	Alpha-spring	.49	.40	.50	.34	.45
HES: Mother Involved	Test-retest	.54	.60	.54	.57	.55
	Alpha-fall	.56	.64	.54	.45	.57
	Alpha-spring	.57	.67	.50	.58	.61
HES: Books	Test-retest	.50	.59	.47	.57	.55
	Alpha-fall	.46	.54	.48	.49	.51
	Alpha-spring	.54	.61	.48	.45	.56
SBI: Task Orientation	Test-retest	.50	.56	.47	.51	.45
	Alpha-fall	.56	.60	.60	.60	.58
	Alpha-spring	.69	.67	.70	.56	.59

(continued)

Table IV-12

INSTRUMENT RELIABILITY BY GROUP FOR SIX-SITE AND FOUR-SITE SAMPLES

(continued)

Instrument or Scale	Reliability	Six-Site Sample		Four-Site Sample		Total Sample
		Home Start	Control Group	Home Start	Head Start	
SBI:	Test-retest	.43	.42	.38	.52	.44
Extraversion-	Alpha-fall	.57	.71	.55	.53	.61
Introversion	Alpha-spring	.68	.77	.68	.67	.71
SBI:	Test-retest	.53	.65	.60	.66	.60
Hostility-	Alpha-fall	.67	.67	.70	.65	.66
Tolerance	Alpha-spring	.71	.68	.72	.73	.71
POCL:	Test-retest	.63	.48	.66	.49	.55
Test	Alpha-fall	.93	.92	.92	.92	.92
Orientation	Alpha-spring	.92	.93	.92	.91	.92
POCL:	Test-retest	.59	.52	.57	.36	.51
Sociability	Alpha-fall	.91	.86	.91	.92	.90
	Alpha-spring	.89	.90	.88	.91	.91

Table IV-13

PRESCHOOL INVENTORY
FALL-SPRING GROWTH

	Six-Site Analysis				Four-Site Analysis			
	Home Start (N=192)		Control (N=132)		Home Start (N=130)		Head Start (N=112)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Fall	9.64	5.12	10.54	3.91	10.78	5.39	10.59	5.05
Spring	15.26	6.39	13.48	4.97	17.16	6.35	15.27	5.59
Difference	5.63	4.61	2.94	3.60	6.38	4.82	4.68	4.11
t ratio	14.41*		7.48*		12.96*		10.73*	

*p<.05

Table IV-14

PRESCHOOL INVENTORY

Percent Passing Each Item--Home Start vs. Control
Fall 1973, Spring 1974 and Fall-Spring Gain[1]

Item	Home Start (N=140) Fall	Spring	Gain	Rank	Control (N=85) Fall	Spring	Gain	Rank
11. What does a dentist do?	23	69	46*	1	28	45	16*	10
5. Put yellow car on little box	22	54	31*	2	29	34	05	23
29. Coloring a square	20	49	29*	4.5	34	22	-12	32
31. Coloring a triangle	27	56	29*	4.5	32	51	19*	7
8. If you were sick, who would you go to?	34	64	29*	4.5	33	53	20*	4
3. What is this? (knee)	51	79	29*	4.5	61	84	22*	2
2. Show me your shoulder	48	75	27*	7	54	74	20*	4
32. Orange	46	71	24*	8	45	58	13*	13
26. Draw a square	14	35	21*	11.5	19	38	19*	7
6. Put blue car under green box	16	36	21*	11.5	12	31	19*	7
9. When do we eat breakfast?	29	50	21*	11.5	24	53	29*	1
30. Purple	33	54	21*	11.5	36	48	07	20.5
19. Point to middle checker	35	56	21*	11.5	31	51	20*	4
4. What is this? (elbow)	40	61	21*	11.5	44	60	16*	10
14. How many hands do we have?	42	61	19*	15	48	56	08	16.5
10. If you wanted to find a lion, where would you look?	04	21	17*	16.5	07	15	08	16.5
18. Which is slower, a car or a bicycle?	49	66	17*	16.5	54	61	07	20.5
12. Which way does a phonograph record go?	21	37	16*	19	24	21	-02	30.5
16. How many wheels does a car have?	22	38	16*	19	15	29	14*	12
22. Point to the second checker	25	41	16*	19	33	34	01	26.5
27. Draw a triangle	06	21	14*	22	05	21	16*	10
15. How many wheels does a bicycle have?	42	56	14*	22	51	59	08	16.5
28. What is the color of the night?	45	59	14*	22	58	59	01	26.5
17. How many toes do you have?	05	16	11*	24	00	04	04	24
21. Point to the last checker	34	44	10	25	27	36	09	14
13. Which way does a ferris wheel go?	15	24	09*	26	20	19	-01	29
7. Put two cars behind box in middle	08	14	06	28	05	12	07	20.5
25. Point to one that is most like a tent	63	69	06	28	68	69	01	26.5
1. What is your first name?	79	85	06	28	86	87	01	26.5
23. Which of two groups has less checkers?	23	26	03	30	24	21	-02	30.5
20. Point to first checker	39	39	00	31	39	46	07	20.5
24. Which of two groups has more checkers? (both the same)	05	03	-02	32	11	02	-08*	16.5

---

*p ≤ .05

[1] Items are listed in order of decreasing gain in percent passing for the Home Start group. Data from all six sites are included in this analysis.

Table IV-15

PRESCHOOL INVENTORY

Percent Passing Each Item--Home Start vs. Head Start Fall 1973, Spring 1974 and Fall-Spring Gain[1]

Item	Home Start (N=97)				Head Start (N=90)			
	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
11. What does a dentist do?	28	78	51*	1	37	62	26*	4
29. Coloring a square	20	56	36*	2	27	44	18*	14.5
31. Coloring a triangle	28	62	34*	3.5	32	53	21*	10
5. Put yellow car on little box	27	61	34*	3.5	31	57	26*	4
3. What is this? (knee)	55	84	29*	5	61	84	23*	7.5
8. If you were sick, who would you go to?	39	67	28*	6	52	62	10	20.5
2. Show me your shoulder	54	80	27*	7	57	82	26*	4
19. Point to middle checker	42	68	26*	8	23	59	36*	1
6. Put blue car under green box	21	45	25*	9.5	13	33	20*	11
9. When do we eat breakfast?	34	59	25*	9.5	23	41	18*	14.5
10. If you wanted to find a lion, where would you look?	03	27	24*	12	03	20	17*	16
30. Purple	38	62	24*	12	39	62	23*	7.5
26. Draw a square	20	43	24*	12	14	49	34*	2
18. Which is slower, a car or a bicycle?	49	72	23*	15	50	53	03	28
4. What is this? (elbow)	43	66	23*	15	44	63	19*	12.5
32. Orange	53	75	23*	15	51	74	23*	7.5
27. Draw a triangle	08	29	21*	17	11	24	13*	18
16. How many wheels does a car have?	25	44	20*	18	16	29	13*	18
12. Which way does a phonograph record go?	26	43	18*	19	24	43	19*	12.5
28. What is the color of the night?	47	64	16*	20.5	46	59	13	18
17. How many toes do you have?	05	22	16*	20.5	03	08	04	27
22. Point to the second checker	27	42	15*	22	43	44	01	30
14. How many hands do we have?	52	65	13*	23.5	46	53	08	22.5
21. Point to the last checker	33	46	13*	23.5	26	49	23*	7.5
13. Which way does a ferris wheel go?	20	31	11*	25	17	24	08	22.5
7. Put two cars behind box in middle	09	20	10*	26.5	03	09	06	25
15. How many wheels does a bicycle have?	55	65	10*	26.5	44	54	10	20.5
23. Which of two groups has less checkers?	23	31	08	28	33	36	02	29
1. What is your first name?	78	86	07	29	88	93	06	25
20. Point to first checker	40	46	06	30	26	31	06	25
25. Point to one that is most like a tent	73	73	00	31	66	63	-02	31
24. Which of two groups has more checkers (both the same)	05	04	-01	32	09	04	-04	32

*$p \leq .05$

[1] Items are listed in order of decreasing gain in percent passing for the Home Start group. Only the four sites iwth both Home Start and Head Start programs are included in this analysis.

Table IV-16

PRESCHOOL INVENTORY
FACTOR ANALYSIS OF ITEM CHANGE
ITEMS LOADING HIGHEST ON EACH FACTOR

(N=315)

		Loading
FACTOR I	(9.3%)	
5.	Put yellow car on little box.	.73
32.	Color triangle orange.	.65
6.	Put blue car under green box.	.60
30.	Color square purple.	.60
11.	What does a dentist do?	.47
19.	Point to the middle one.	.45
4.	What is this (elbow)?	.47*
15.	How many wheels does a bicycle have?	.35*
26.	Make one like this (square).	.31*
FACTOR II	(5.3%)	
29.	Color the square.	.70
31.	Color the triangle.	.66
17.	How many toes do you have?	.30*
13.	Which way does a ferris wheel go?	.30*
FACTOR III	(5.5%)	
20.	Point to first checker.	-.63
23.	Which of these 2 groups has less checkers in it?	.59
27.	Make one like this (triangle).	-.49
26.	Make one like this (square).	-.48
19.	Point to the middle one.	-.37*
16.	How many wheels does a car have?	-.32*
FACTOR IV	(6.1%)	
3.	What is this (knee)?	-.75
4.	What is this (elbow)?	-.55
2.	Show me your shoulder.	-.51
21.	Point to the last checker.	-.42*
16.	How many wheels does a car have?	-.36*
FACTOR V	(4.6%)	
24.	Which of these 2 groups has more checkers in it (both the same)?	.65
15.	How many wheels does a bicycle have?	.55
17.	How many toes do you have?	.44
30.	Color the square purple.	.33*

(continued)

Table IV-16

(continued)

		Loading
FACTOR VI	(3.7%)	
7.	Put 2 cars behind the box in the middle.	-.81
8.	If you were sick, who would you go to?	-.40*
10.	If you wanted to find a lion, where would you look?	.31*
FACTOR VII	(5.3%)	
18.	Which is slower, a bicycle or a car?	.76
9.	When do we eat breakfast?	.55
14.	How many hands do you have?	.50
28.	Which one is the color of night?	.36*
FACTOR VIII	(4.3%)	
22.	Point to the second one.	.78
21.	Point to the last one.	.55
19.	Point to the middle one.	.32*
FACTOR IX	(3.6%)	
1.	What is your first name?	.72
16.	How many wheels does a car have?	-.41
24.	Which of these 2 groups has more checkers in it (both the same)?	.35
FACTOR X	(5.7%)	
12.	Which way does a phonograph record go?	.70
8.	If you were sick, who would you go to?	.49
10.	If you wanted to find a lion, where would you look?	.33*
16.	How many wheels does a car have?	.36*
17.	How many toes do you have?	.36*
28.	Which one is the color of night?	.36*
23.	Which of these 2 groups has less checkers in it?	.32*
11.	What does a dentist do?	.30*
FACTOR XI	(4.1%)	
25.	Point to the one that is most like a tent.	-.78
13.	Which way does a ferris wheel go?	-.41
14.	How many hands do you have?	-.30*

Eleven factors accounted for 57.0% of the total variance.

---

*Item also shows substantial loading on another factor.

Table IV-17

PRESCHOOL INVENTORY
PERCENT RESPONSES IN EACH SCORING CATEGORY

SIBLINGS

Item[2]	N	Response Category[1]					
		C	W	DK	R	NR	V
1	37	86.5	10.8	0.0	0.0	2.7	97.3
2	37	78.4	16.2	0.0	2.7	2.7	37.8
3	37	64.9	21.6	10.8	2.7	0.0	97.3
4	37	56.8	24.3	10.8	2.7	5.4	86.5
5	37	40.5	54.1	0.0	0.0	5.4	35.1
6	37	24.3	64.9	2.7	2.7	5.4	21.6
7	37	10.8	83.8	0.0	5.4	0.0	27.0
8	37	59.5	24.3	8.1	0.0	8.1	91.9
9	37	43.2	37.8	16.2	0.0	2.7	94.6
10	37	13.5	35.1	24.3	8.1	18.9	89.2
11	37	54.1	18.9	10.8	2.7	13.5	86.5
12	37	29.7	48.6	10.8	2.7	8.1	91.9
13	37	21.6	56.8	8.1	5.4	8.1	83.8
14	37	45.9	51.4	2.7	0.0	0.0	100.0
15	37	67.6	32.4	0.0	0.0	0.0	97.3
16	37	37.8	56.8	5.4	0.0	0.0	94.6
17	37	13.5	83.8	2.7	0.0	0.0	97.3
18	37	67.6	29.7	2.7	0.0	0.0	100.0
19	37	48.6	51.4	0.0	0.0	0.0	10.8
20	37	32.4	67.6	0.0	0.0	0.0	10.8
21	37	32.4	67.6	0.0	0.0	0.0	5.4
22	37	40.5	56.8	2.7	0.0	0.0	10.8
23	37	21.6	70.3	8.1	0.0	0.0	37.8
24	37	2.7	89.2	8.1	0.0	0.0	29.7
25	37	70.3	29.7	0.0	0.0	0.0	27.0
26	36	50.0	50.0	0.0	0.0	0.0	19.4
27	37	37.8	54.1	2.7	5.4	0.0	18.9
28	37	54.1	45.9	0.0	0.0	0.0	32.4
29	37	40.5	54.1	2.7	0.0	2.7	32.4
30	37	48.6	43.2	2.7	2.7	2.7	21.6
31	37	56.8	35.1	2.7	2.7	2.7	27.0
32	37	59.5	35.1	2.7	0.0	2.7	21.6

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[1] Code:
C = Correct
W = Wrong
DK = Don't Know
R = Refusal
NR = No Response
V = Verbal

[2] See key to items.

Table IV-18

PRESCHOOL INVENTORY: PERCENT PASSING BY GROUP

SIBLINGS

Item[1]	Group		Total Sample
	Home Start	Control	
	N=21	N=15-16	N=36-37
1	81.0	93.8	86.5
2	81.0	75.0	78.4
3	47.6	87.5	64.9
4	52.4	62.5	56.8
5	42.9	37.5	40.5
6	19.0	31.3	24.3
7	4.8	18.8	10.8
8	66.7	50.0	59.5
9	47.6	37.5	43.2
10	19.0	6.3	13.5
11	52.4	56.3	54.1
12	28.6	31.3	29.7
13	14.3	31.3	21.6
14	38.1	56.3	45.9
15	71.4	62.5	67.6
16	38.1	37.5	37.8
17	14.3	12.5	13.5
18	61.9	75.0	67.6
19	52.4	43.8	48.6
20	28.6	37.5	32.4
21	33.3	31.3	32.4
22	28.6	56.3	40.5
23	14.3	31.3	21.6
24	0.0	6.3	2.7
25	76.2	62.5	70.3
26	52.4	46.7	50.0
27	38.1	37.5	37.8
28	61.9	43.8	54.1
29	38.1	43.8	40.5
30	47.6	50.0	48.6
31	61.9	50.0	56.8
32	66.7	50.0	59.5

---

[1] See key to items.

Table IV-20

KEY TO
DENVER DEVELOPMENTAL SCREENING TEST

Test Booklet Item Numbers	Data Analysis Item Numbers	
Fine Motor Items		
1	1	Builds tower of 8 blocks
2	2	Imitates bridge
3	3	Picks longer line
4	4	Draws vertical line
5	5	Copies circle
6	6	Copies cross
7 (3)	-	Draws girl or boy - 3 parts
7 (6)	-	Draws girl or boy - 6 parts
-	7*	Draw a girl or boy in which 1 = failure 2 = pass on 7 (3) but not 7 (6) 3 = pass on 7 (6)
Language Items		
8	8	Uses plural
9	9	Comprehends hungry
9	10	Comprehends cold
9	11	Comprehends tired
10	12	Comprehends prepositions (on)
10	13	Comprehends prepositions (under)
10	14	Comprehends prepositions (behind)
10	15	Comprehends prepositions (in front)
11	16	Recognizes colors (red)
11	17	Recognizes colors (green)
11	18	Recognizes colors (yellow)
11	19	Recognizes colors (blue)
12	20	Opposite analogies (fire)
12	21	Opposite analogies (horse)
12	22	Opposite analogies (mother)
13	23	Composition of (door)
13	24	Composition of (spoon)
13	25	Composition of (shoe)
Gross Motor Items		
14-1	--	Balances on one foot 1 second
14-5	--	Balances on one foot 5 seconds
14-10	--	Balances on one foot 10 seconds

---

*Items 7 and 26 are continuous items employed to remove item dependencies Items 7 (3) and 7 (6) and Item 14-1, 5 and 10.

Table IV-20
(continued)

Test Booklet Item Numbers	Data Analysis Item Number	
14-1, 5 & 10	26*	Score for balance item in which 1 = failure 2 = pass for 1 second 3 = pass for 5 seconds 4 = pass for 10 seconds
15	27	Jumps in place
16	28	Broad jump
17	29	Hops on one foot
18	30	Heel-to-toe walk
19	31	Backward heel-to-toe
20	32	Catches bounced ball
Personal-Social Items		
21	33	Plays interactive games
22	34	Separates from mother easily
23	35	Puts on clothing
24	36	Buttons up
25 + 26**	37	Dresses with supervision
27	38	Dresses without supervision

---

*Items 7 and 26 are continuous items employed to remove item dependencies Items 7 (3) and 7 (6) and Item 14-1 , 5 and 10.

**One summary item represents items 25 and 26.

DENVER DEVELOPMENTAL SCREENING TEST
PERCENT RESPONSES IN EACH SCORING CATEGORY

Item[2]	Response Category[1] C	W	DK	R	NR	Sum of DK, R, NR
Fine Motor (N=416)						
1	90.1	9.6				.2
2	85.6	13.7	.5	.0	.2	
3	62.5	32.0				5.5
4	98.1	1.2	.2	.0	.5	
5	68.5	29.8	1.0	.0	.7	
6	63.7	34.9	.5	.2	.7	
7 (3)	47.8	49.3	1.2	.5	1.2	
7 (6)	16.1	81.0	1.2	.5	1.2	
Language (N=412)						
8	47.6	50.5				1.9
9 Hungry	78.6	10.7	.7	3.9	6.1	
9 Cold	68.7	22.1	1.0	2.4	5.8	
9 Tired	73.3	16.7	1.2	2.9	5.8	
10 On	95.6	3.6	.7	.0	.0	
10 Under	88.6	10.7	.2	.0	.5	
10 Behind	72.6	25.5	.7	.2	1.0	
10 Front	68.9	28.2	1.5	.0	1.5	
11 Red	71.1	27.4	.7	.0	.7	
11 Green	68.0	30.8	.5	.0	.7	
11 Yellow	66.7	31.8	.7	.0	.7	
11 Blue	66.7	31.1	1.2	.5	.5	
12 Fire	62.9	16.7	1.7	7.3	11.4	
12 Horse	56.1	26.9	1.5	6.6	9.0	
12 Mother	28.4	52.4	1.9	6.6	10.7	
13 Door	33.7	49.3	1.9	7.5	7.5	
13 Spoon	25.5	54.4	1.9	10.9	7.3	
13 Shoe	21.4	58.3	1.5	11.4	7.5	
Gross Motor (N=387)						
14 (1)	97.7	.3				2.1
14 (5)	27.6	70.3				2.1
14 (10)	9.8	88.1				2.1
15	91.5	5.2	1.3	.3	1.8	
16	85.5	14.0	.3	.0	.3	
17	80.4	14.2	2.8	1.3	1.3	
18	24.0	70.0				5.9
19	11.6	80.4				8.0
20	46.5	53.5				.0
Personal-Social (N=416)						
	YES (1)	NO (2)				
21	87.3	12.7				
22	82.7	17.3				
23	99.0	1.0				
24	79.6	20.4				
25 + 26	78.1	21.9				
27	79.8	20.2				

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[1] Code:
C = Correct
W = Wrong
DK = Don't know
R = Refusal
NR = No Response

[2] See key to items.

Table IV-23

DENVER DEVELOPMENTAL SCREENING TEST: PERCENT PASSING BY AGE

Item[2]	Age[1] 3 1/2 N=33-42	4 N=91-104	4 1/2 N=115-121	5 N=93-97	5 1/2 N=40-42	All Ages N=372-402
Fine Motor						
1	87.2	92.3	89.8	89.6	88.1	90.0
2	92.3	77.9	83.9	91.7	85.7	85.2
3	51.3	51.0	65.3	77.1	61.9	62.7
4	100.0	98.1	96.6	99.0	97.6	98.0
5	69.2	62.5	64.4	78.1	73.8	68.7
6	53.8	55.8	61.9	72.9	73.8	63.4
7 (3)	35.9	36.5	50.0	61.5	54.8	48.4
7 (6)	17.9	8.7	20.3	15.6	19.0	15.8
Language						
8	51.3	43.6	45.4	50.5	53.7	47.6
9 Hungry	66.7	81.2	80.7	82.1	73.2	79.0
9 Cold	51.3	59.4	71.4	75.8	82.9	68.6
9 Tired	66.7	66.3	72.3	81.1	80.5	73.2
10 On	94.9	98.0	95.0	95.8	97.6	96.2
10 Under	84.6	88.1	84.9	92.6	92.7	88.4
10 Behind	59.0	67.3	72.3	77.9	85.4	72.4
10 Front	61.5	59.4	69.7	71.6	85.4	68.4
11 Red	59.0	70.3	68.1	71.6	85.4	70.4
11 Green	48.7	66.3	66.4	70.5	82.9	67.3
11 Yellow	59.0	60.4	65.5	71.6	82.9	66.8
11 Blue	56.4	58.4	65.5	75.8	78.0	66.6
12 Fire	56.4	65.3	58.0	68.4	63.4	62.8
12 Horse	41.0	63.4	49.6	57.9	61.0	55.4
12 Mother	15.4	27.7	24.4	38.9	34.1	28.9
13 Door	25.6	17.8	34.5	46.3	43.9	33.2
13 Spoon	20.5	9.9	26.9	38.9	31.7	25.3
13 Shoe	12.8	11.9	18.5	34.7	24.4	20.8
ross Motor						
14 (1)	100.0	96.7	97.4	100.0	97.5	98.1
14 (5)	24.2	17.6	27.8	34.4	40.0	28.0
14 (10)	0.0	3.3	10.4	17.2	15.0	9.9
15	97.0	89.0	91.3	92.5	90.0	91.4
16	84.8	84.6	82.6	88.2	97.5	86.3
17	78.8	79.1	79.1	86.0	80.0	80.9
18	15.2	11.0	24.3	31.2	45.0	24.2
19	9.1	8.8	8.7	17.2	15.0	11.6
20	39.4	38.5	46.1	61.3	42.5	47.0
ersonal-Social						
21	92.9	89.0	86.8	85.6	88.1	87.8
22	78.6	82.0	84.3	82.5	83.3	82.6
23	97.6	99.0	99.2	99.0	100.0	99.0
24	76.2	82.0	75.2	81.4	85.7	79.6
25 + 26	66.7	72.0	83.5	80.4	81.0	77.9
27	73.8	73.0	83.5	86.6	73.8	79.6

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ge intervals: 3 1/2 (38-45 months); 4 (46-51) months); 4 1/2 (52-57 months); 5 (58-63 months); 5 1/2 (64-70 months); seven children with ages below 38 months or above 70 months were excluded from the total sample. The N for each item varies because of missing data.

See key to items.

Table IV-24

DENVER DEVELOPMENTAL SCREENING TEST: PERCENT PASSING BY GROUP

Item[1]	Home Start N=170-187	Control N=117-126	Head Start N=92-98	Total Sample N=379-407
Fine Motor				
1	88.5	93.6	88.8	90.1
2	82.5	87.2	87.8	85.2
3	57.9	64.8	69.4	62.8
4	97.3	99.2	98.0	98.0
5	65.0	72.8	70.4	68.7
6	59.0	64.0	72.4	63.8
7 (3)	44.3	52.0	50.0	48.0
7 (6)	14.2	14.4	21.4	16.0
Language				
8	51.1	45.2	44.8	47.8
9 Hungry	81.1	73.8	82.3	79.1
9 Cold	63.9	67.5	77.1	68.2
9 Tired	75.0	67.5	77.1	73.1
10 On	96.7	95.2	96.9	96.3
10 Under	88.9	85.7	90.6	88.3
10 Behind	71.1	71.4	76.0	72.4
10 Front	66.1	72.2	67.7	68.4
11 Red	69.4	65.1	79.2	70.4
11 Green	68.9	65.1	68.7	67.7
11 Yellow	68.3	63.5	67.7	66.7
11 Blue	68.3	66.7	63.5	66.7
12 Fire	60.6	59.5	70.8	62.7
12 Horse	52.2	49.2	69.8	55.5
12 Mother	27.8	27.8	31.2	28.6
13 Door	34.4	31.7	33.3	33.3
13 Spoon	26.1	29.4	19.8	25.6
13 Shoe	21.1	19.0	24.0	21.1
Gross Motor				
14 (1)	97.1	98.3	97.8	97.6
14 (5)	23.5	34.2	27.2	27.7
14 (10)	7.1	12.8	12.0	10.0
15	92.4	88.0	93.5	91.3
16	84.7	85.5	90.2	86.3
17	77.6	82.1	82.6	80.2
18	25.3	24.8	21.7	24.3
19	10.6	12.8	12.0	11.6
20	43.5	49.6	48.9	46.7
Personal-Social				
21	90.4	83.6	86.7	87.5
22	80.7	86.9	80.6	82.6
23	98.9	98.4	100.0	99.0
24	80.2	77.9	79.6	79.4
25 + 26	74.3	79.5	81.6	77.6
27	79.7	79.5	79.6	79.6

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[1] See key to items.

Table IV-25

DENVER DEVELOPMENTAL SCREENING TEST
INTERITEM AND ITEM-SUBTOTAL CORRELATIONS
(Ns range from 387 to 416)

	FINE MOTOR								LANGUAGE																			GROSS MOTOR								PERSONAL-SOCIAL					
	1	2	3	4	5	6	7	Sub-total	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Sub-total	26	27	28	29	30	31	32	Sub-total	33	34	35	36	37	38
FINE MOTOR																																									
2	28																																								
3	09	09																																							
4	25	19	04																																						
5	16	33	12	21																																					
6	17	39	30	15	49																																				
7	18	22	22	10	33	45																																			
Subtotal	27	39	26	22	46	62	46																																		
LANGUAGE																																									
8	11	13	15	-07	18	15	13	22																																	
9	08	04	24	05	10	18	21	25	08																																
10	12	11	25	-03	23	26	28	35	16	24																															
11	20	21	25	08	22	27	28	39	21	29	40																														
12	15	17	12	20	13	13	08	20	04	00	06	14																													
13	10	20	13	03	27	19	21	30	08	03	28	20	15																												
14	09	21	24	08	19	27	21	33	13	17	28	19	03	29																											
15	12	24	27	12	24	28	25	38	21	10	27	35	04	32	41																										
16	12	18	25	08	18	28	25	35	17	16	30	26	07	16	27	27																									
17	13	12	31	-03	22	31	32	40	15	16	24	23	13	20	18	33	52																								
18	14	17	28	02	19	28	33	39	16	08	30	25	18	25	29	35	57	54																							
19	16	16	25	02	14	30	31	37	15	03	27	20	18	25	26	31	49	53	63																						
20	20	22	22	14	26	30	30	41	20	22	33	37	18	20	26	36	28	25	33	27																					
21	13	25	23	04	25	31	28	40	17	18	30	35	12	19	22	29	28	21	27	20	47																				
22	03	12	21	-03	11	17	15	22	19	12	19	23	13	11	12	20	20	22	30	25	29	31																			
23	10	19	27	03	27	35	46	48	21	20	30	28	10	19	22	27	26	31	29	30	35	32	26																		
24	03	15	24	01	24	26	31	36	12	10	25	28	10	16	21	27	20	23	25	25	22	27	21	55																	
25	06	15	22	00	23	31	31	37	16	13	21	26	08	13	16	21	25	24	27	27	25	25	28	57	52																
Subtotal	21	31	43	06	38	48	49	57	28	26	49	50	18	35	41	51	53	52	60	54	54	49	40	56	46	47															
GROSS MOTOR																																									
26	04	19	17	09	18	21	24	31	09	11	13	12	03	05	17	12	13	11	15	13	16	04	09	19	16	22	24														
27	03	05	-05	05	09	03	12	08	-04	01	07	10	18	04	01	02	09	07	11	08	05	02	05	04	-01	-05	08	12													
28	15	11	01	09	13	08	10	15	01	-02	09	06	14	12	09	05	03	03	09	15	14	12	07	07	05	08	14	05	03												
29	02	15	05	06	24	17	23	26	11	17	14	18	06	13	13	18	08	13	12	14	10	16	13	17	14	14	26	24	18	09											
30	11	14	16	06	15	24	31	33	14	09	13	13	06	05	12	19	14	10	15	17	19	17	11	30	27	23	31	28	00	16	22										
31	04	07	12	04	14	21	23	25	15	07	09	11	04	06	06	12	10	10	12	13	15	09	10	20	18	23	23	26	00	06	16	51									
32	09	12	11	06	16	24	25	29	06	15	18	17	07	05	14	12	11	12	17	15	14	14	09	18	13	11	25	25	10	10	23	20	23								
Subtotal	12	23	18	11	29	32	40	47	14	17	23	23	13	13	21	22	18	18	25	25	25	19	17	31	25	27	59	38	13	14	34	42	39	34							
PERSONAL-SOCIAL																																									
33	12	15	09	14	15	12	08	18	09	00	09	14	10	10	08	16	03	04	06	09	15	07	03	13	04	02	15	08	09	05	09	10	-01	14	14						
34	11	05	04	16	04	03	11	11	03	02	04	06	03	10	07	03	02	12	10	08	04	00	07	04	04	10	10	07	14	00	15	00	09	00	10	-06					
35	-03	05	05	-01	07	12	04	08	03	03	00	08	-02	-03	01	00	07	13	06	06	-01	-02	-07	00	-02	-03	03	05	08	-04	03	05	03	03	06	04	02				
36	13	22	10	14	10	24	14	24	-01	09	15	15	07	13	13	13	08	12	15	11	08	06	08	06	05	11	18	07	02	08	06	03	08	22	15	15	02	07			
37	05	20	13	14	11	11	07	17	00	09	10	04	04	03	12	13	19	15	11	09	10	08	12	08	12	10	18	-01	06	-02	08	04	08	02	05	01	03	07	19		
38	13	28	04	09	19	20	23	29	01	06	14	10	01	08	18	10	13	13	17	17	08	06	10	15	09	04	19	14	11	07	13	11	08	14	21	13	09	13	28	31	
Subtotal	19	33	14	23	22	26	23	22	04	10	18	18	08	15	21	20	17	21	22	20	16	10	14	16	12	13	23	13	15	06	19	10	11	19	24	09	04	12	29	25	39

Table IV-27

DENVER DEVELOPMENTAL SCREENING TEST
ROTATED FACTOR LOADINGS[1]
FOUR FACTORS EXTRACTED
(Item Ns range from 387 to 416)

Item[2]	FI	FII	FIII	FIV	h^2
Fine Motor					
1	15	48	04	07	26
2	19	58	-13	13	41
3	48	00	-10	14	26
4	-07	56	-05	05	32
5	29	46	-27	06	37
6	40	36	34	18	43
7 (3 + 6)	39	19	45	20	43
Language					
8	38	01	-12	-06	16
9	32	11	-13	-05	13
10	54	15	-06	09	33
11	55	28	-08	-02	38
12	16	31	05	10	13
13	39	28	07	10	24
14	42	23	-03	17	26
15	55	23	-03	13	37
16	50	-06	01	55	56
17	49	-09	-03	60	61
18	54	-03	-01	61	67
19	48	-05	-04	60	60
20	61	29	-05	-03	46
21	61	23	-04	11	44
22	48	-01	-06	08	24
23	59	01	-43	-00	53
24	53	-07	-38	-04	43
25	53	-09	-41	-01	46
Gross Motor					
26	06	10	-57	14	36
27	-10	17	-08	33	15
28	10	28	-09	-02	09
29	09	19	-42	12	24
30	17	03	-68	01	49
31	09	-05	-67	06	46
32	09	21	-43	14	25
Personal-Social					
33	08	40	-04	-00	17
34	-02	09	-11	23	08
35	-11	02	-11	35	15
36	02	41	-08	27	25
37	04	22	-03	34	17
38	-05	37	-21	43	37
PCT. V	13.6	6.7	7.0	6.2	

Four factors accounted for 33.5% of the total variance.

---

[1] Principal components factor analysis followed by a varimax rotation.

[2] See Key to items.

Table IV-28

DENVER DEVELOPMENTAL SCREENING TEST
ITEMS LOADING HIGHEST ON EACH FACTOR

(Items Ns range from 387-416)

		Loading
FACTOR I	(9.9%)	
20.	Opposite analogies (fine)	.61
21.	Opposite analogies (horse)	.61
23.	Composition of (door)	.59*
11.	Comprehends tired	.55
15.	Comprehends prepositions (in front)	.55
10.	Comprehends cold	.54
18.	Recognizes colors (yellow)	.54*
24.	Composition of (spoon)	.53*
25.	Composition of (shoe)	.53*
16.	Recognizes colors (red)	.50*
17.	Recognizes colors (green)	.49*
22.	Opposite analogies (Mother)	.48
19.	Recognizes colors (blue)	.48*
3.	Picks longer line	.48
14.	Comprehends prepositions (behind)	.42
6.	Copies cross	.40*
13.	Comprehends prepositions (under)	.39
7.	Draws a boy or girl (3 + 6)	.39*
8.	Uses plural	.38
9.	Comprehends hungry	.32
FACTOR II	(6.7%)	
2.	Imitates bridge	.58
4.	Draws vertical line	.56
1.	Builds tower of 8 blocks	.48
5.	Copies circle	.46
36.	Buttons up	.41
33.	Plays interactive games	.40
38.	Dresses without supervision	.37*
6.	Copies cross	.36*
12.	Comprehends prepositions (on)	.31

---

*Item also has substantial loading on another factor.

(continued)

Table IV-28

DENVER DEVELOPMENTAL SCREENING TEST ITEMS LOADING HIGHEST ON EACH FACTOR

(Item Ns range from 387-416)

(continued)

		Loadings
FACTOR III (7.0%)		
30.	Heel-to-toe walk	-.68
31.	Backward heel-to-toe	-.67
26.	Balances on one foot	-.57
7.	Draws boy or girl	.45*
32.	Catches bounced ball	-.43
23.	Composition of (door)	-.43*
29.	Hops on one foot	-.42
25.	Composition of (shoe)	-.41*
24.	Composition of (spoon)	-.38*
6.	Copies cross	.34*
FACTOR IV (6.2%)		
18.	Recognizes colors (yellow)	.61*
19.	Recognizes colors (blue)	.60*
17.	Recognizes colors (green)	.60*
16.	Recognizes colors (red)	.55*
35.	Puts on clothing	.35
37.	Dresses with supervision	.34
27.	Jumps in place	.33

Four factors accounted 33.5% of the total variance.

---

*Item also has substantial loading on another factor.

Table IV-30

DDST SCALE MEANS BY GROUP

Treatment Group	FINE MOTOR				LANGUAGE				GROSS MOTOR				PERSONAL-SOCIAL			
	N	Mean	SD	SE	N	Mean	SD	SE	N	Mean	SD	SE	N	Mean	SD	SE
Home Start	183	12.1	1.9	.14	185	29.1	4.5	.33	168	11.7	1.6	.12	185	11.0	1.1	.08
Control	124	12.3	1.8	.16	122	28.5	4.0	.36	117	11.7	1.7	.16	126	11.1	.98	.09
Head Start	109	12.7	1.7	.17	107	29.2	4.2	.40	102	11.9	1.6	.16	105	11.1	1.1	.11
Total Sample	416	12.3	1.8	.09	412	28.9	4.3	.21	387	11.7	1.7	.08	416	11.1	1.1	.05

Table IV-31

DESCRIPTIVE DATA

	DENVER DEVELOPMENTAL SCREENING TEST															
	Fine Motor (possible range=7-15)				Language (possible range=18-36)				Gross Motor (possible range=7-16)				Personal-Social (possible range=7-12)			
	N	Mean	SD	SE	N	Mean	SD	SE	N	Mean	SD	SE	N	Mean	SD	SE
Age[1]:																
3 1/2	42	10.8	1.8	.28	39	25.5	3.6	.58	33	10.5	.87	.15	42	10.5	1.2	.18
4	103	11.7	1.8	.18	99	27.5	3.8	.38	88	11.1	1.3	.14	103	10.9	1.1	.11
4 1/2	121	12.3	1.8	.17	124	28.7	4.3	.39	116	11.8	1.7	.16	124	11.2	1.0	.09
5	100	13.2	1.3	.13	101	30.7	3.7	.37	100	12.3	1.5	.15	100	11.2	1.0	.10
5 1/2	43	13.6	1.2	.19	43	31.3	3.3	.50	43	12.9	1.6	.25	42	11.4	.83	.13
Total:	409	12.3	1.8	.09	406	28.9	4.2	.21	380	11.8	1.6	.08	411	11.1	1.1	.05
Sex:																
M	213	12.1	1.7	.12	212	29.0	4.3	.29	197	11.5	1.7	.12	209	11.0	1.1	.08
F	203	12.5	1.9	.13	200	28.8	4.3	.30	190	12.0	1.5	.11	207	11.1	1.0	.07
Total:	416	12.3	1.8	.09	412	28.9	4.3	.21	387	11.7	1.7	.08	416	11.1	1.1	.05

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[1] Age intervals: 3 1/2 (38-45 months); 4 (46-51) months; 4 1/2 (52-57 months); 5 (58-63 months); 5 1/2 (64-70 months); seven children with ages below 38 months or above 70 months were excluded from the total sample for this analysis.

Table IV-32

DENVER DEVELOPMENTAL SCREENING TEST
FALL-SPRING GROWTH

	Six-Site Analysis				Four-Site Analysis			
	Home Start (N=192)		Control (N=130)		Home Start (N=132)		Head Start (N=112)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Language								
Fall	26.53	4.31	26.34	3.72	27.49	4.29	26.57	3.83
Spring	29.56	4.23	28.74	3.78	30.26	4.30	29.55	3.86
Difference	3.04	3.07	2.40	2.61	2.77	3.04	2.98	2.46
t ratio	12.61*		9.57*		9.61*		11.81*	
Gross Motor								
Fall	10.90	1.59	10.93	1.52	11.10	1.65	11.14	1.72
Spring	11.83	1.63	11.85	1.57	12.06	1.71	12.06	1.59
Difference	.93	1.50	.92	1.49	.96	1.54	.92	1.56
t ratio	7.43*		6.13*		6.36*		5.41*	
Fine Motor								
Fall	10.36	2.21	10.43	1.84	10.80	2.28	10.57	1.83
Spring	12.20	1.88	12.25	1.75	12.59	1.83	12.75	1.72
Difference	1.84	1.58	1.82	1.43	1.79	1.55	2.18	1.59
t ratio	15.39*		13.85*		12.58*		14.12*	
Personal-Social								
Fall	10.10	.95	10.27	.89	10.24	.93	10.41	.84
Spring	11.01	1.10	11.12	.99	11.12	1.04	11.11	1.12
Difference	.91	1.16	.85	1.21	.88	1.22	.70	1.06
t ratio	10.50*		7.78*		7.90*		6.63*	

*p<.05

Table IV-33

DENVER DEVELOPMENTAL SCREENING TEST
Item Means--Home Start and Control, Six Sites
Fall 1973, Spring 1974 and Fall-Spring Gain[1]

Item	Home Start (N=175)				Control (N=119)			
Fine Motor	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
4. Draws vertical line	1.56	1.98	.42*	1	1.57	1.98	.41*	1
7. Draws girl or boy	1.28	1.63	.35*	2	1.27	1.62	.35*	2.5
6. Copies cross	1.29	1.61	.33*	3	1.25	1.61	.35*	2.5
5. Copies circle	1.37	1.67	.30*	4	1.25	1.69	.30*	4
3. Picks longer line	1.39	1.60	.21*	5	1.40	1.57	.17*	5.5
2. Builds bridge	1.67	1.82	.14*	6	1.71	1.88	.17*	5.5
1. Builds tower	1.79	1.89	.10*	7	1.83	1.90	.07	7

	Home Start (N=144)				Control (N=100)			
Gross Motor	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
32. Catches bounced ball	1.26	1.44	.19*	1	1.32	1.48	.16*	3
30. Forward heel-to-toe walk	1.12	1.31	.18*	2	1.13	1.22	.09*	5
29. Hops on one foot	1.65	1.81	.17*	3	1.57	1.79	.22*	2
26. Balances on one foot	2.19	2.35	.15*	4	2.22	2.47	.25*	1
31. Backward heel-to-toe walk	1.04	1.14	.10*	5	1.03	1.11	.08*	6
28. Broad jump	1.76	1.84	.08	6	1.74	1.87	.13*	4
27. Jumps in place	1.88	1.94	.06	7	1.92	1.91	-.01	7

	Home Start (N=180)				Control (N=122)			
Personal-Social	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
38. Dresses without supervision	1.32	1.78	.46*	1	1.32	1.84	.52*	1
36. Buttons up	1.57	1.77	.20*	2	1.60	1.81	.21*	2
37. Dresses with supervision	1.65	1.76	.11*	3	1.70	1.77	.07	3
33. Plays interactive games	1.81	1.89	.08*	4	1.83	1.87	.04	4
35. Puts on clothing	1.94	1.99	.06*	5	1.98	1.98	.01	5
34. Separates from mother easily	1.81	1.82	.01	6	1.85	1.84	-.01	6

	Home Start (N=163)				Control (N=109)			
Language	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
16. Recognizes colors (red)	1.47	1.76	.29*	1	1.50	1.67	.17*	5.5
11. Comprehends tired	1.52	1.77	.25*	2	1.60	1.74	.15*	9.5
21. Opposite analogies (horse)	1.39	1.63	.24*	3.5	1.37	1.46	.09	16.5
20. Opposite analogies (fire)	1.43	1.67	.24*	3.5	1.36	1.63	.28*	1.5
10. Comprehends cold	1.48	1.71	.22*	5	1.50	1.65	.16*	7
17. Recognizes colors (green)	1.52	1.73	.21*	6	1.45	1.67	.22*	3
18. Recognizes colors (yellow)	1.52	1.72	.20*	7	1.49	1.63	.15*	9.5
24. Composition of (spoon)	1.13	1.33	.19*	8	1.08	1.26	.17*	5.5
19. Recognizes colors (blue)	1.49	1.67	.18*	9.5	1.50	1.65	.15*	9.5
9. Comprehends hungry	1.63	1.80	.18*	9.5	1.64	1.78	.14*	12
23. Composition of (door)	1.23	1.40	.17*	11	1.13	1.32	.19*	4
25. Composition of (shoe)	1.13	1.28	.15*	12.5	1.06	1.17	.11*	14
22. Opposite analogies (mother)	1.19	1.34	.15*	12.5	1.15	1.26	.11*	14
14. Comprehends prepositions (behind)	1.57	1.71	.14*	14	1.64	1.72	.08	18
8. Uses plural	1.37	1.49	.12*	15	1.43	1.52	.09	16.5
15. Comprehends prepositions (in front)	1.61	1.72	.10*	16	1.63	1.74	.11*	14
13. Comprehends prepositions (under)	1.87	1.89	.02	17	1.36	1.63	.28*	1.5
12. Comprehends prepositions (on)	1.96	1.94	-.02	18	1.50	1.65	.15*	9.5

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*$p \leq .05$

[1] Items within each scale listed in order of decreasing mean gain for Home Start.

Table IV-34

DENVER DEVELOPMENTAL SCREENING TEST

Item Means--Home Start and Head Start, Four Sites Fall 1973, Spring 1974 and Fall-Spring Gain[1]

Item	Home Start (N=120)				Head Start (N=107)			
Fine Motor	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
4. Draws vertical line	1.59	1.98	.39*	1.5	1.71	1.98	.27*	5
7. Draws girl or boy	1.37	1.76	.39*	1.5	1.21	1.73	.51*	1
6. Copies cross	1.37	1.71	.33*	3	1.30	1.74	.44*	2
5. Copies circle	1.47	1.76	.29	4	1.38	1.73	.35*	3
3. Picks longer line	1.45	1.67	.22*	5	1.41	1.72	.31*	4
2. Builds bridge	1.74	1.84	.10*	6	1.72	1.92	.20*	6
1. Builds tower	1.81	1.87	.07	7	1.83	1.93	.10*	7

	Home Start (N=105)				Head Start (N=87)			
Gross Motor	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
30. Forward heel-to-toe walk	1.14	1.37	.23*	1	1.10	1.22	.11*	3
26. Balances on one foot	2.23	2.42	.19*	2	2.32	2.38	.06	6
32. Catches bounced ball	1.32	1.48	.15*	3	1.31	1.59	.28*	1.5
29. Hops on one foot	1.69	1.83	.14*	4	1.61	1.89	.28*	1.5
31. Backward heel-to-toe walk	1.06	1.18	.12*	5	1.06	1.13	.07	5
28. Broad jump	1.75	1.84	.09	6	1.82	1.91	.09	4
27. Jumps in place	1.90	1.94	.04	7	1.92	1.95	.03	7

	Home Start (N=120)				Head Start (N=102)			
Personal-Social	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
38. Dresses without supervision	1.34	1.79	.45*	1	1.39	1.78	.39*	1
36. Buttons up	1.60	1.80	.20	2	1.62	1.83	.22*	2
37. Dresses with supervision	1.69	1.81	.12*	3	1.71	1.81	.11*	3
33. Plays interactive games	1.83	1.91	.07	4	1.84	1.85	.01	5
35. Puts on clothing	1.94	2.00	.06	5	1.97	2.00	.03	4
34. Separates from mother easily	1.83	1.82	-.02	6	1.88	1.82	-.06	6

	Home Start (N=112)				Head Start (N=96)			
Language	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
16. Recognizes colors (red)	1.52	1.79	.27*	1	1.69	1.78	.09	15
21. Opposite analogies (horse)	1.45	1.67	.22*	2.5	1.41	1.65	.24*	2.5
24. Composition of (spoon)	1.18	1.40	.22*	2.5	1.14	1.22	.08	16
17. Recognizes colors (green)	1.54	1.75	.21*	5	1.56	1.72	.16*	11
18. Recognizes colors (yellow)	1.54	1.75	.21*	5	1.53	1.73	.20*	5
23. Composition of (door)	1.31	1.53	.21*	5	1.15	1.32	.18*	9
25. Composition of (shoe)	1.18	1.37	.19*	8	1.07	1.19	.11*	14
20. Opposite analogies (fire)	1.50	1.69	.19*	8	1.24	1.69	.45*	1
10. Comprehends cold	1.60	1.79	.19*	8	1.52	1.76	.24*	2.5
11. Comprehends tired	1.62	1.79	.17*	10.5	1.61	1.75	.14*	12
19. Recognizes colors (blue)	1.53	1.70	.17*	10.5	1.54	1.73	.19*	7
9. Comprehends hungry	1.70	1.86	.16*	12.5	1.65	1.85	.21*	4
22. Opposite analogies (mother)	1.22	1.38	.16*	12.5	1.09	1.28	.19*	7
14. Comprehends prepositions (behind)	1.63	1.74	.11*	14	1.62	1.81	.19*	7
8. Uses plural	1.40	1.48	.08	15	1.33	1.46	.13	13
15. Comprehends prepositions (in front)	1.71	1.72	.02	16	1.55	1.72	.17*	10
13. Comprehends prepositions (under)	1.89	1.90	.01	17	1.87	1.93	.05	17
12. Comprehends prepositions (on)	1.96	1.96	-.01	18	1.99	1.97	-.02	18

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*$p \leq .05$

[1] Items within each scale listed in order of decreasing mean gain for Home Start.

Table IV-35

DENVER DEVELOPMENTAL SCREENING TEST
FACTOR ANALYSIS OF ITEM CHANGE
ITEMS LOADING HIGHEST ON EACH FACTOR

(N=285)

		Loading
FACTOR I	(5.3%)	
17.	Recognizes colors (green).	.68
16.	Recognizes colors (red).	.67
19.	Recognizes colors (blue).	.65
18.	Recognizes colors (yellow).	.64
FACTOR II	(4.9%)	
24.	Composition of (spoon).	.77
25.	Composition of (shoe).	.74
23.	Composition of (door).	.62
FACTOR III	(3.9%)	
4.	Draws vertical line.	.70
7.	Draws boy or girl.	-.46
29.	Hops on one foot.	.45
3.	Picks longer line.	.32*
11.	Comprehends tired.	.31*
FACTOR IV	(3.6%)	
20.	Opposite analogies (fire).	.74
21.	Opposite analogies (horse).	.65
7.	Draws boy or girl.	.31*
15.	Comprehends prepositions (in front).	.30*
FACTOR V	(3.6%)	
36.	Button buttons.	.73
12.	Comprehends preposition (on).	.46
10.	Comprehends cold.	-.32*
FACTOR VI	(3.6%)	
38.	Dresses without supervision.	-.72
35.	Puts on pants.	.61
10.	Comprehends cold.	-.35*

(continued)

Table IV-35

(continued)

		Loading
FACTOR VII	(4.1%)	
8.	Uses plural.	-.64
26.	Balances on one foot.	-.64
37.	Tells front of clothes from back.	.47
3.	Picks longer line.	-.32*
FACTOR VIII	(3.5%)	
30.	Forward heel-to-toe walk.	.74
31.	Backward heel-to-toe walk.	.58
32.	Catches bounced ball.	.38
FACTOR IX	(3.6%)	
2.	Builds bridge.	.72
14.	Comprehends prepositions (behind).	.61
27.	Jumps in place.	-.32*
FACTOR X	(3.6%)	
34.	Separates from mother easily.	.69
27.	Jumps in place.	.59
11.	Comprehends tired.	.31*
12.	Comprehends preposition (on).	.31*
FACTOR XI	(3.9%)	
6.	Copies cross.	-.71
5.	Copies circle.	-.63
7.	Draws girl or boy.	-.32*
FACTOR XII	(3.4%)	
28.	Broad jump.	.71
3.	Picks longer line.	.36
FACTOR XIII	(3.5%)	
13.	Comprehends prepositions (under).	.77
15.	Comprehends prepositions (in front).	.46

(continued)

Table IV-35

(continued)

		Loading
FACTOR XIV	(3.4%)	
1.	Builds tower.	.77
33.	Plays interactive games.	.37
11.	Comprehends tired.	.30*
FACTOR XV	(3.6%)	
9.	Comprehends hungry.	.74
37.	Tells front of clothes from back.	.43*
10.	Comprehends cold.	.34*
FACTOR XVI	(3.2%)	
22.	Opposite analogies (mother).	.76

Sixteen factors accounted for 61.0% of the total variance.

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*Item also loads on another factor.

Table IV-36

8-BLOCK TASK
PERCENT OF RESPONSES BY AGE
FINAL PLACEMENT OF SHORT O

Age[1] (years)	N	Incorrect	One Dimension Matched	Correct
3 1/2	37	5.4	51.4	43.2
4	97	1.0	38.1	60.8
4 1/2	119	6.7	31.1	62.2
5	98	1.0	21.4	77.6
5 1/2	43	0.0	18.6	81.4
Total	394	3.0	31.0	66.0

Table IV-37

8-BLOCK TASK
PERCENT OF RESPONSES BY AGE
EXPLANATION OF SHORT O PLACEMENT[2]

Age[1] (years)	N	No Correct Verbalization	One Dimension Verbalized	Both Dimensions Verbalized
3 1/2	36	88.9	5.6	5.6
4	97	76.3	20.6	3.1
4 1/2	118	57.6	30.5	11.9
5	97	46.4	34.0	19.6
5 1/2	43	34.9	37.2	27.9
Total	391	59.8	27.4	12.8

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[1] Age intervals: 3 1/2 (38-45 months); 4 (46-51 months); 4 1/2 (52-57 months); 5 (58-63 months); 5 1/2 (64-70 months); seven children with ages below 38 months or above 70 months were excluded from the total sample.

[2] Three children with valid placements on Short O were missing explanations on the 8-Block score form.

Table IV-38

8-BLOCK TASK
PERCENT OF RESPONSES BY AGE
FINAL PLACEMENT OF TALL X

Age[1] (years)	N	Incorrect	One Dimension Matched	Correct
3 1/2	37	16.2	56.8	27.0
4	97	14.4	41.2	44.3
4 1/2	119	10.1	35.3	54.6
5	98	2.0	35.7	62.2
5 1/2	43	2.3	23.3	74.4
Total	394	8.9	37.6	53.6

Table IV-39

8-BLOCK TASK
PERCENT OF RESPONSES BY AGE
EXPLANATION OF TALL X PLACEMENT[2]

Age[1] (years)	N	No Correct Verbalization	One Dimension Verbalized	Both Dimensions Verbalized
3 1/2	36	86.1	8.3	5.6
4	95	81.6	12.6	6.3
4 1/2	119	62.2	23.5	14.3
5	98	49.0	29.6	21.4
5 1/2	43	46.5	18.6	34.9
Total	391	63.9	20.5	15.6

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[1] Age intervals: 3 1/2 (38-45 months); 4 (46-51 months); 4 1/2 (52-57 months); 5 (58-63 months); 5 1/2 (64-70 months); seven children with ages below 38 months or above 70 months were excluded from the total sample.

[2] Three children with valid placements on Tall X were missing explanations on the 8-Block score form.

Table IV-40

8-BLOCK CHILD SCORES

	N	PLACEMENT Mean	PLACEMENT SD	EXPLANATION Mean	EXPLANATION SD	TOTAL Mean	TOTAL SD
TOTAL SAMPLE	401	3.1	.94	1.1	1.37	4.1	2.01
SEX:							
M	202	3.1	.98	1.0	1.32	4.1	2.01
F	199	3.1	.91	1.1	1.42	4.2	2.01
AGE (YEARS):							
3½	37	2.5	.93	.4	.96	2.8	1.61
4	97	2.9	.88	.5	.98	3.4	1.51
4½	119	3.0	1.03	1.1	1.34	4.1	2.02
5	98	3.4	.77	1.5	1.48	4.8	1.98
5½	43	3.5	.74	1.8	1.58	5.4	2.06

Table IV-42

MEAN NUMBER OF SERVINGS AND FOOD SCORES CLASSIFIED AS POOR AND SATISFACTORY[1]

Spring 1974

	HOME START/CONTROL				HEAD START			
Diet Quality	Poor N=270		Satisfactory N=51		Poor N=64		Satisfactory N=48	
Food Groups	Mean No. Serv.	Mean Food Score	Mean No. Serv.	Mean Food Score	Mean No. Serv.	Mean Food Score	Mean No. Serv.	Mean Food Score
Milk	1.1	1.0	2.8	2.1	1.6	1.3	3.0	2.2
Meat	2.6	1.3	2.4	1.4	2.6	1.3	3.2	1.4
Eggs	.5	.2	.7	.2	.4	.2	.3	.1
A-Veg.	.2	.8	.4	.1	.1	.6	.5	.2
C-Fruit	.4	.1	1.6	.5	.8	.3	3.0	.8
Other Frts./Vegs.	2.1	1.4	3.6	2.3	3.4	1.9	4.7	2.4
Bread/ Cereal	4.1	3.2	6.3	3.9	3.5	2.9	5.7	3.9
Total Serv.	11.3	-	17.9	-	12.5	-	20.5	-
Dietary Score	-	7.3	-	10.1	-	8.0	-	11.0

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[1] Since only one child had a diet rated excellent, the "excellent" category is excluded from the table.

Table IV-43

NUTRIENT CONTENT OF SATISFACTORY DIETS[1]

Food Groups	Food Scores	Wt/Food Score gm	Total Weight gm	Protein gm	Iron mg	Calcium mg	Vitamin A IU	Vitamin C mg	Thiamin mg	Ribo-flavin mg	Niacin mg
Milk	2.1	200	420	14.7	trace	495.6	588	4.2	.126	.714	.42
Meat cooked chuck	1.4	60	85	22.1	2.8	9.35	34	0	.042	.17	3.40
Eggs hard boiled	.2	50	10	1.29	.23	5.4	118	0	.009	.028	.01
A-Vegetable carrots	.1	50	5	.045	.003	.165	52.5	.003	trace	trace	.002
C-Fruit orange juice (canned, unsweetened)	.5	50	25	.2	.1	2.5	50	10.0	.018	.005	.08
Other Fruit/Vegetable											
french fried potato	1.0	100	100	4.3	1.3	15.0	trace	21.0	.13	.08	3.1
banana	1.3	100	130	1.4	.9	10.4	247	13.0	.065	.078	.91
Bread/Cereal											
2 slices	2.0	25	50	4.35	1.2	35.0	trace	trace	.06	.04	.51
½ c ck oatmeal	1.0	100	100	3.3	1.1	13.0	0	0	.16	.03	.2
½ c ck noodles	1.0	100	100	4.1	.9	10.0	70	0	.14	.08	1.2
TOTAL				55.8	8.5	596.415	1159.5	48.2	0.75	1.226	9.832
RDA, 3-6 year old				30.0	10.0	800.0	2500.0	40.0	0.9	1.1	12.0

[1] Foods listed under each food group were arbitrarily selected as almost typical of children's diets. Weight per food score is based on amounts specified by the data collection procedure.

Table IV-44

FOOD INTAKE QUESTIONNAIRE
MEAN NUMBER OF SERVINGS FOR EACH FOOD GROUP AND PROPORTIONS OF DAILY TOTAL - FOOD SERVINGS AND DIETARY SCORES
Fall 1973 and Spring 1974

	Fall (N=553) Number of Servings		Spring (N=434) Number of Servings	
Food Group	Mean	SD	Mean	SD
Food Servings				
Milk	1.50	1.25	1.61	1.39
Meat	2.17	1.37	2.78	1.75
Eggs	.59	2.24	.50	.79
Vitamin-A vegetables	.28	.80	.26	.74
Citrus fruits	.93	1.69	.87	2.01
Other fruits and vegetables	2.47	2.37	2.77	2.95
Bread and cereal	3.95	2.26	4.50	2.46
FOOD TOTAL	11.90	5.20	13.30	6.08
Dietary Scores				
Milk	1.29	.84	1.34	.88
Meat	1.22	.37	1.30	.29
Eggs	.23	.29	.22	.29
Vitamin-A vegetables	.11	.22	.10	.22
Citrus fruits	.32	.46	.30	.44
Other fruits and vegetables	1.75	.90	1.71	.95
Bread and cereal	3.11	1.11	3.30	1.02
DIETARY TOTAL	8.03	2.08	8.27	2.16
Dietary Score for Combined Food Groups				
Milk	1.29	.84	1.34	.88
Meat and eggs	1.44	.48	1.52	.40
All fruits and vegetables	2.18	1.18	2.11	1.22
Breads and cereals	3.11	1.11	3.30	1.02
TOTAL	8.03	2.08	8.27	2.16

Table IV-45

NUTRITIONAL INTAKE BY FOOD GROUP AND PERCENTAGE OF IDEAL INTAKE

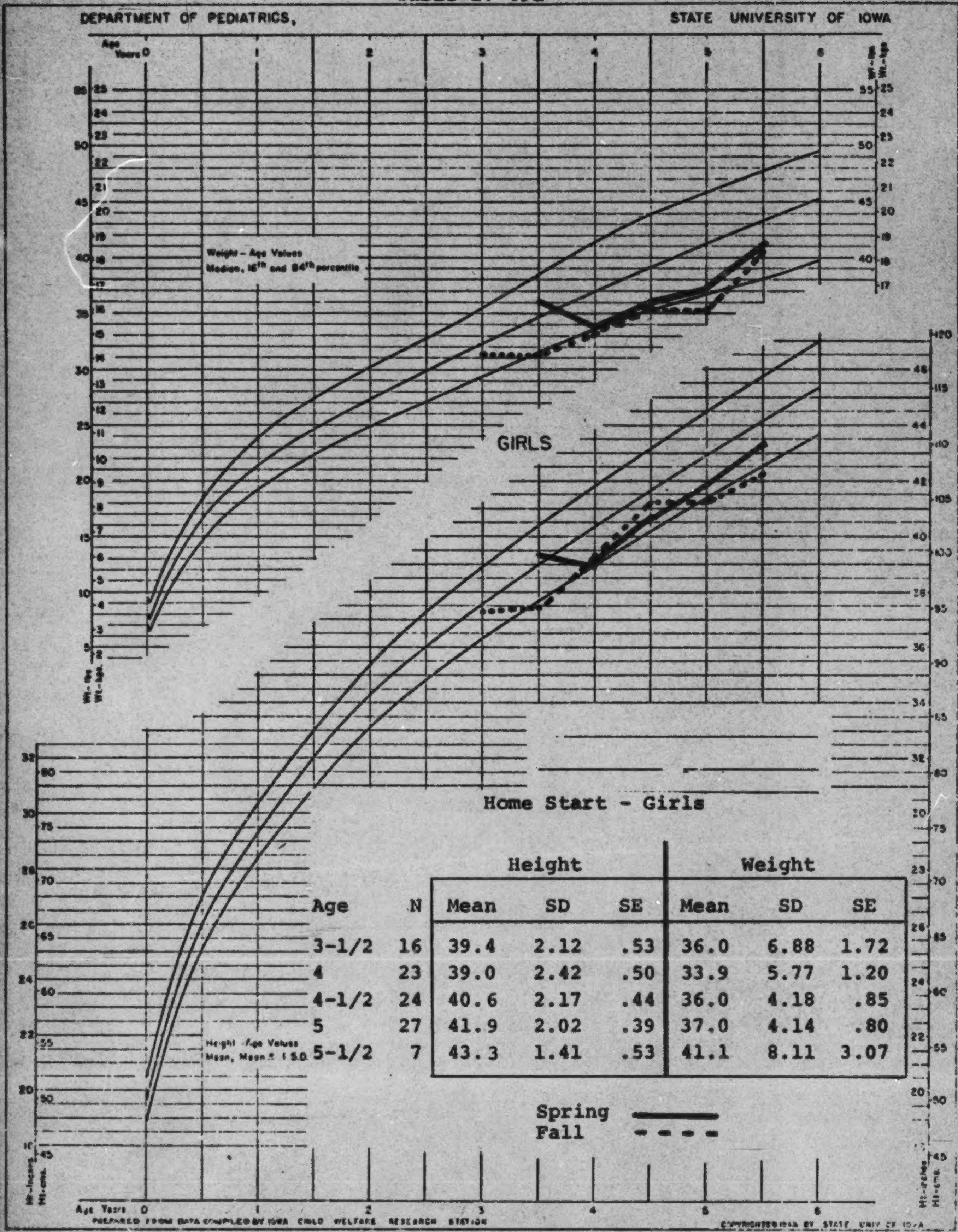
Food Group	Ideal Score	Home Start N=192			Control N=130			Head Start N=112			Total Sample N=434		
		Mean	SD	% of Ideal	Mean	SD	% of Ideal	Mean	SD	% of Ideal	Mean	SD	% of Ideal
Milk	2.5	1.3	.86	52.0	1.1	.89	44.0	1.7	.81	68.0	1.3	.88	52.0
Meat	1.4	1.3	.25	92.9	1.2	.38	85.7	1.3	.19	92.9	1.3	.29	92.9
Eggs	.60	.24	.30	40.0	.23	.29	38.3	.17	.27	28.3	.22	.29	36.7
Vitamin A Vegetables	.60	.09	.21	15.0	.10	.22	16.7	.13	.24	21.7	.10	.22	16.7
Citrus Fruits	1.00	.20	.39	20.0	.22	.39	22.0	.56	.47	56.0	.30	.44	30.0
Other Fruits and Vegetables	2.40	1.5	1.0	62.5	1.6	.92	66.7	2.1	.71	87.5	1.7	.95	70.8
Breads and Cereals	4.00	3.3	1.0	82.5	3.3	1.0	82.5	3.3	1.0	82.5	3.3	1.0	82.5
TOTAL	12.50	8.0	2.2	64.0	7.8	2.1	62.4	9.3	1.9	74.4	8.3	2.2	66.4

Table IV-48

DESCRIPTIVE DATA

	HEIGHT				WEIGHT			
	N	Mean	SD	SE	N	Mean	SD	SE
AGE:								
3½	44	39.2	2.13	.32	44	35.1	5.33	.80
4	106	39.8	2.20	.21	106	35.2	4.98	.48
4½	127	41.1	1.84	.16	127	37.3	4.89	.43
5	104	42.0	2.06	.20	104	38.2	5.66	.55
5½	44	43.2	1.59	.24	44	40.3	6.18	.93
SEX:								
M	221	41.2	2.35	.16	221	37.5	5.80	.39
F	211	40.9	2.36	.16	211	36.7	5.28	.36
TOTAL:	432	41.1	2.36	.11	432	37.1	5.56	.27

Table IV-49a



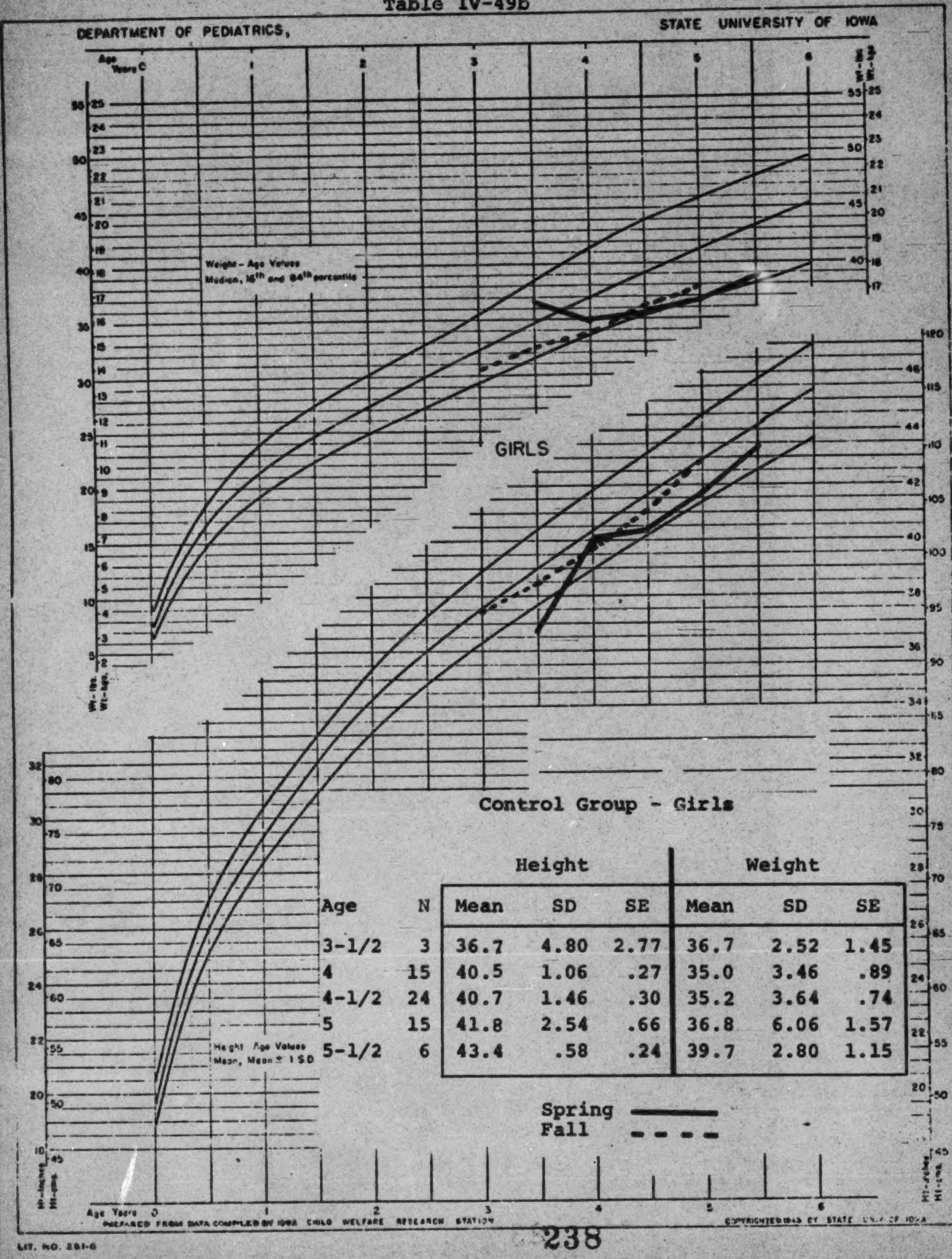
Home Start - Girls

Age	N	Height Mean	Height SD	Height SE	Weight Mean	Weight SD	Weight SE
3-1/2	16	39.4	2.12	.53	36.0	6.88	1.72
4	23	39.0	2.42	.50	33.9	5.77	1.20
4-1/2	24	40.6	2.17	.44	36.0	4.18	.85
5	27	41.9	2.02	.39	37.0	4.14	.80
5-1/2	7	43.3	1.41	.53	41.1	8.11	3.07

Spring ▬▬
Fall - - - -

LIT. NO. 281-D

Table IV-49b

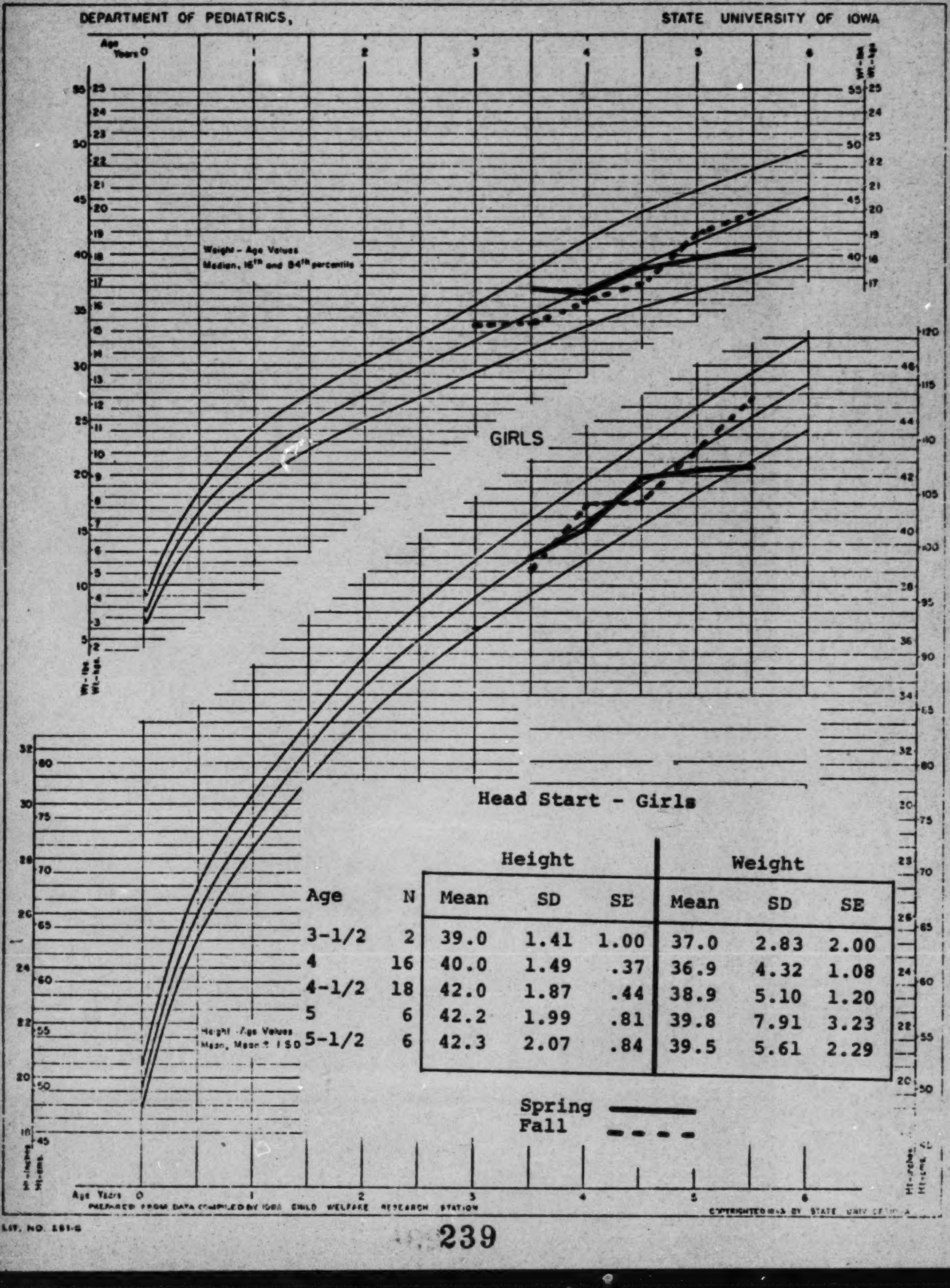


Control Group - Girls

		Height			Weight		
Age	N	Mean	SD	SE	Mean	SD	SE
3-1/2	3	36.7	4.80	2.77	36.7	2.52	1.45
4	15	40.5	1.06	.27	35.0	3.46	.89
4-1/2	24	40.7	1.46	.30	35.2	3.64	.74
5	15	41.8	2.54	.66	36.8	6.06	1.57
5-1/2	6	43.4	.58	.24	39.7	2.80	1.15

Spring ——
Fall - - - -

Table IV-49c

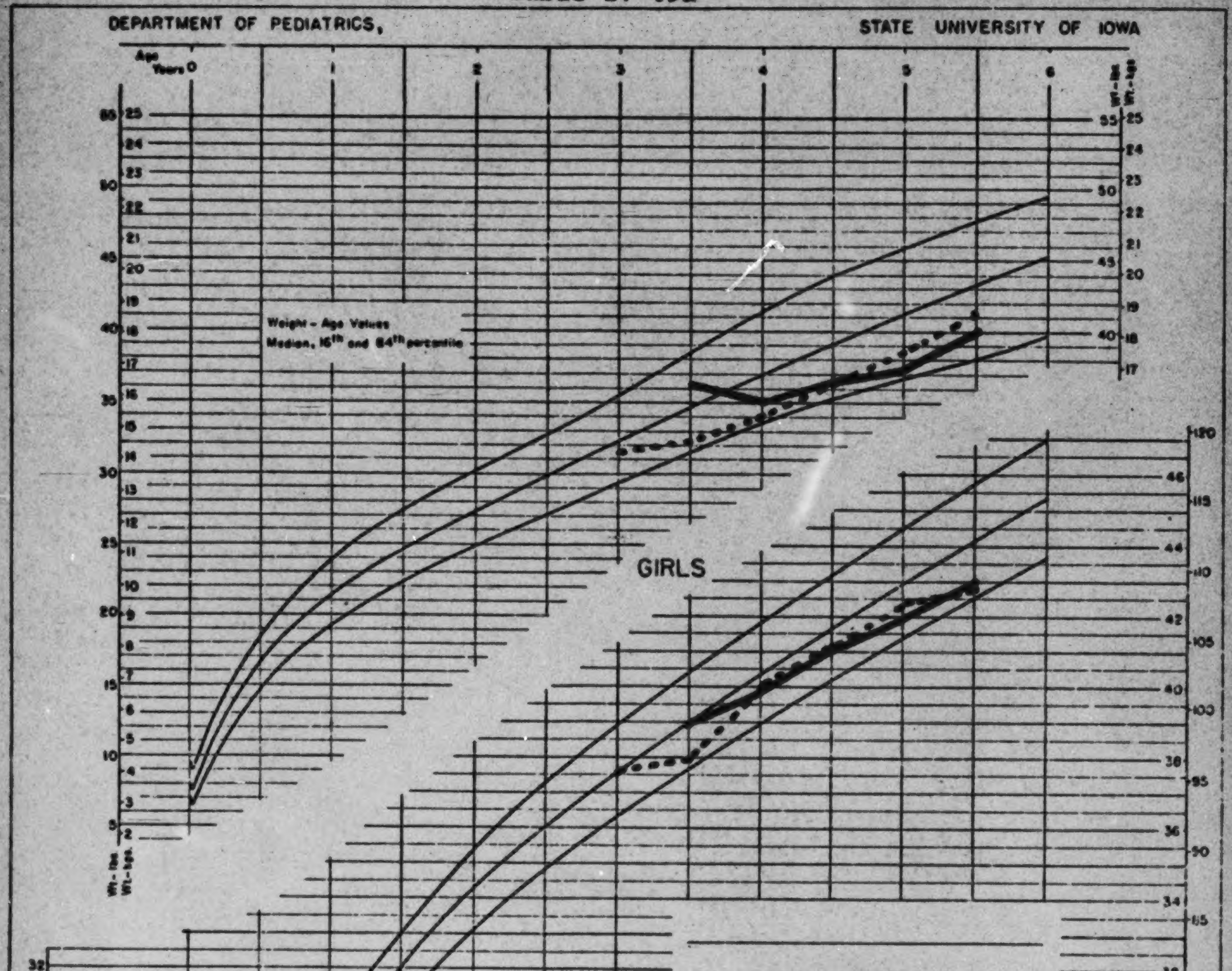


Head Start - Girls

Age	N	Height Mean	Height SD	Height SE	Weight Mean	Weight SD	Weight SE
3-1/2	2	39.0	1.41	1.00	37.0	2.83	2.00
4	16	40.0	1.49	.37	36.9	4.32	1.08
4-1/2	18	42.0	1.87	.44	38.9	5.10	1.20
5	6	42.2	1.99	.81	39.8	7.91	3.23
5-1/2	6	42.3	2.07	.84	39.5	5.61	2.29

Spring ▬▬▬
Fall - - - -

Table IV-49d

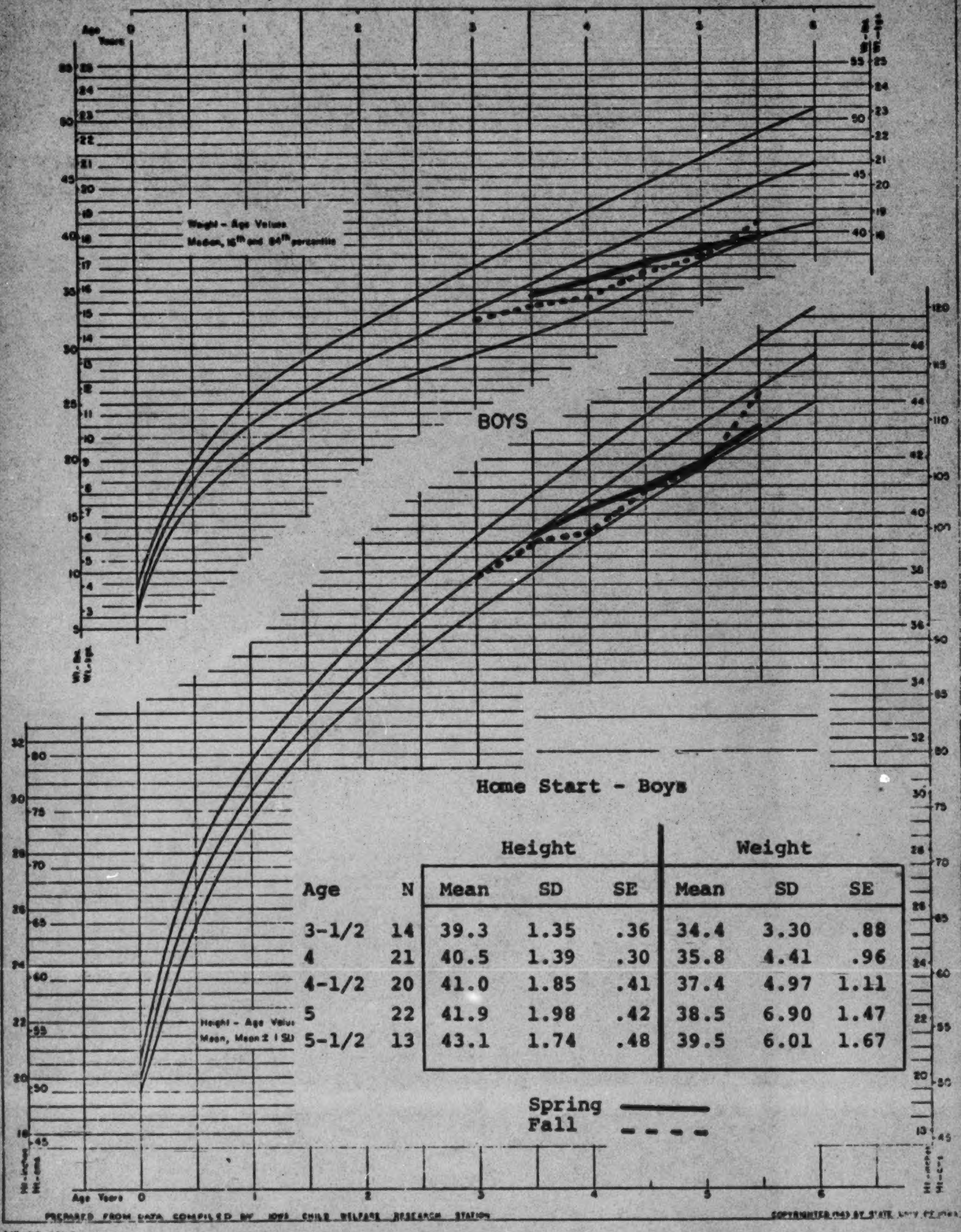


Total Sample - Girls

Age	N	Height Mean	Height SD	Height SE	Weight Mean	Weight SD	Weight SE
3-1/2	21	39.0	2.60	.57	36.2	6.05	1.32
4	54	39.7	1.94	.26	35.1	4.88	.66
4-1/2	66	41.0	1.92	.24	36.5	4.48	.55
5	48	41.9	2.15	.31	37.3	5.30	.76
5-1/2	19	43.0	1.48	.34	40.2	5.79	1.33

Table IV-49e

DEPARTMENT OF PEDIATRICS, STATE UNIVERSITY OF IOWA



Home Start - Boys

Age	N	Height Mean	Height SD	Height SE	Weight Mean	Weight SD	Weight SE
3-1/2	14	39.3	1.35	.36	34.4	3.30	.88
4	21	40.5	1.39	.30	35.8	4.41	.96
4-1/2	20	41.0	1.85	.41	37.4	4.97	1.11
5	22	41.9	1.98	.42	38.5	6.90	1.47
5-1/2	13	43.1	1.74	.48	39.5	6.01	1.67

Spring ▬▬▬
Fall – – – –

PREPARED FROM DATA COMPILED BY IOWA CHILD WELFARE RESEARCH STATION

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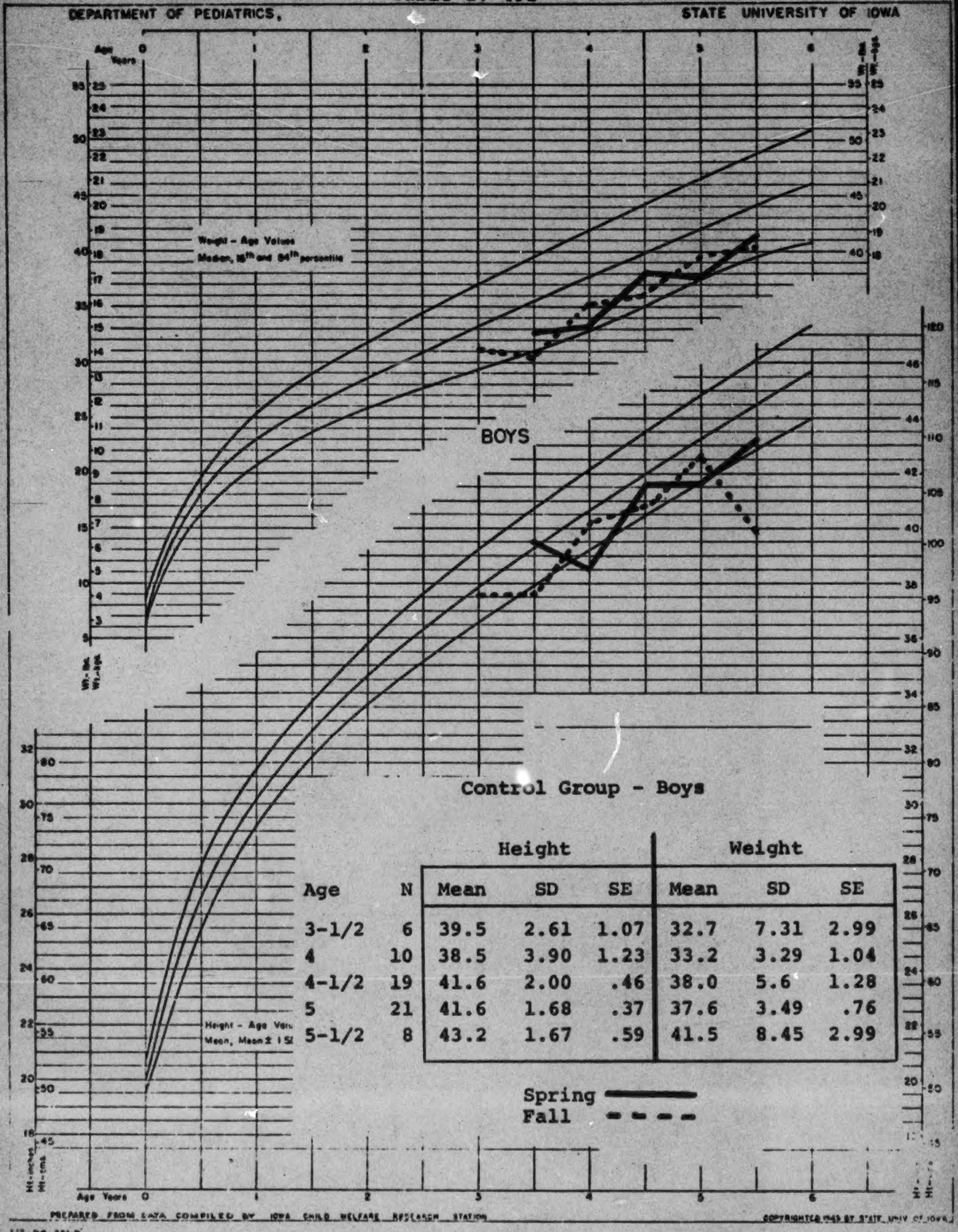
Table IV-49f



Control Group - Boys

Age	N	Height Mean	Height SD	Height SE	Weight Mean	Weight SD	Weight SE
3-1/2	6	39.5	2.61	1.07	32.7	7.31	2.99
4	10	38.5	3.90	1.23	33.2	3.29	1.04
4-1/2	19	41.6	2.00	.46	38.0	5.6	1.28
5	21	41.6	1.68	.37	37.6	3.49	.76
5-1/2	8	43.2	1.67	.59	41.5	8.45	2.99

Spring ▬▬▬
Fall ▪ ▪ ▪ ▪

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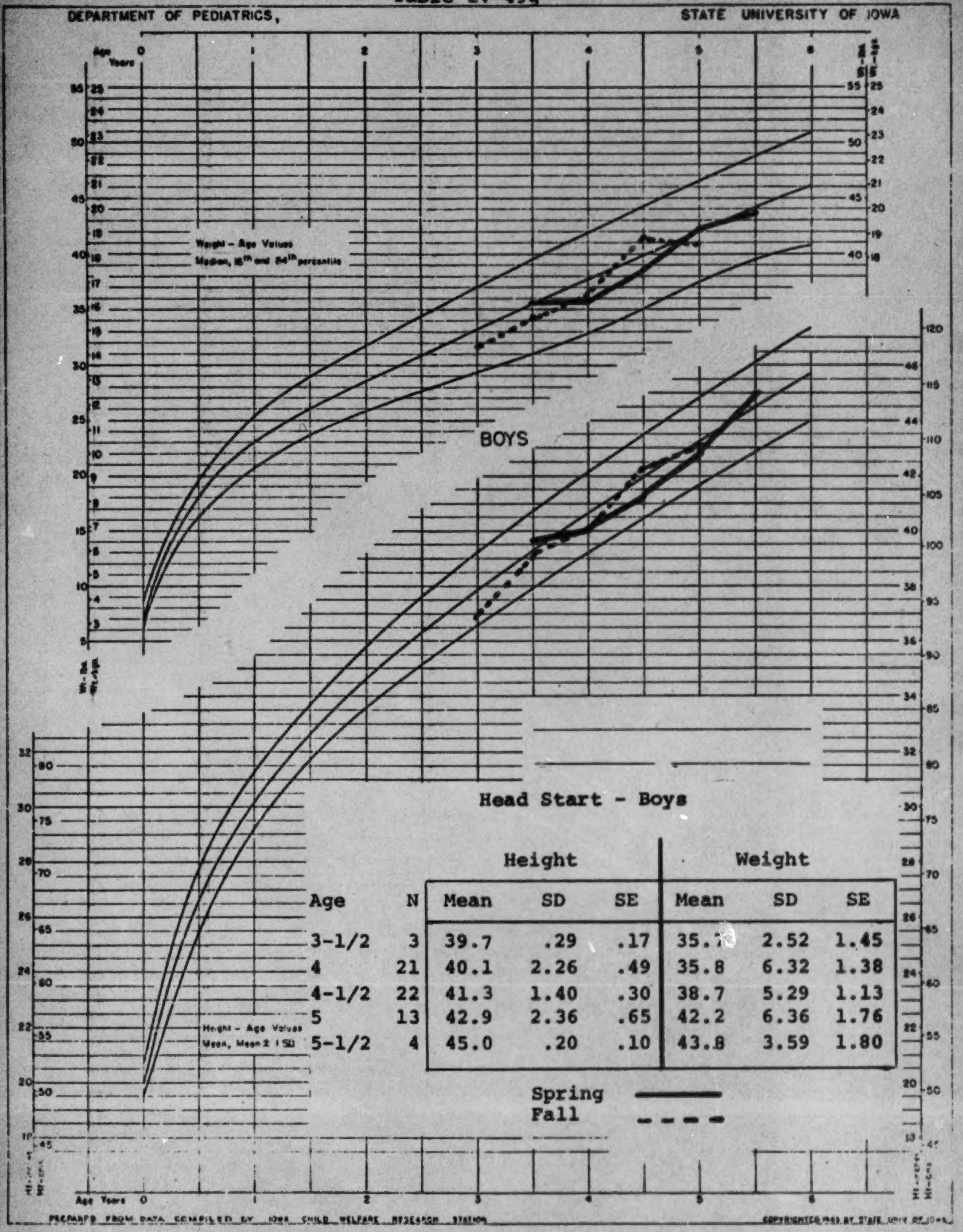
Table IV-49q



Head Start - Boys

		Height			Weight		
Age	N	Mean	SD	SE	Mean	SD	SE
3-1/2	3	39.7	.29	.17	35.7	2.52	1.45
4	21	40.1	2.26	.49	35.8	6.32	1.38
4-1/2	22	41.3	1.40	.30	38.7	5.29	1.13
5	13	42.9	2.36	.65	42.2	6.36	1.76
5-1/2	4	45.0	.20	.10	43.8	3.59	1.80

Spring ▬▬▬

Fall - - - -

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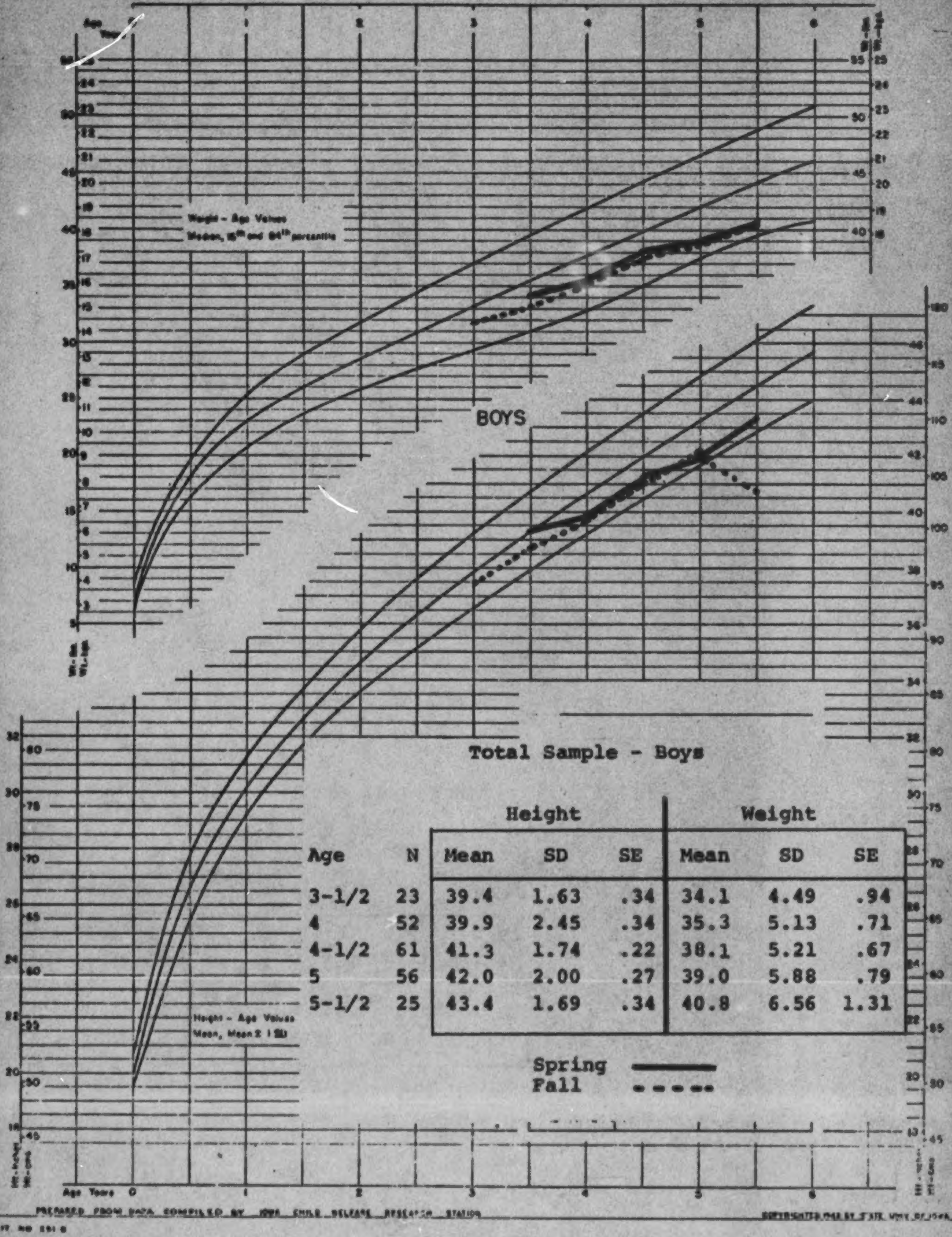
DEPARTMENT OF PEDIATRICS, STATE UNIVERSITY OF IOWA



Total Sample - Boys

		Height			Weight		
Age	N	Mean	SD	SE	Mean	SD	SE
3-1/2	23	39.4	1.63	.34	34.1	4.49	.94
4	52	39.9	2.45	.34	35.3	5.13	.71
4-1/2	61	41.3	1.74	.22	38.1	5.21	.67
5	56	42.0	2.00	.27	39.0	5.88	.79
5-1/2	25	43.4	1.69	.34	40.8	6.56	1.31

Spring ▬▬▬
Fall - - - - -

PREPARED FROM DATA COMPILED BY IOWA CHILD WELFARE RESEARCH STATION

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Table IV-51

KEY TO

SCHAEFER BEHAVIOR INVENTORY ITEMS

TASK ORIENTATION SUBTEST

1. Pays attention to what he's (she's) doing when other things are going on around him (her).
4. Stays with a job until he (she) finishes it.
7. Becomes very involved in what he (she) is doing.
10. Goes from one thing to another; quickly loses interest in things.
13. Watches carefully when an adult is showing how to do something.

EXTRAVERSION-INTROVERSION SUBTEST

2. Tries to be with another person or group of people.
5. Likes to take part in activities with others.
8. Enjoys being with others.
11. Watches others, but doesn't join in with them.
14. Does not wait for others to approach him (her), but makes the first friendly move.

HOSTILITY-TOLERANCE SUBTEST

3. Gets impatient or unpleasant if he (she) can't get what he (she) wants when he (she) wants it.
6. Slow to forgive when offended.
9. Stays angry for a long time after an argument.
12. Complains or whines if he (she) can't get his (her) own way.
15. Gets angry when he (she) has to wait his (her) turn or share with others.

Table IV-52

SCHAEFER BEHAVIOR INVENTORY
PERCENT RESPONSES IN EACH SCORING CATEGORY

		Rating						
Item	N	1	2	3	4	5	6	7
1	433	1.4	4.4	15.5	30.3	9.2	31.2	8.1
2	433	0.2	2.1	3.9	7.4	7.4	36.3	42.7
3	432	2.8	7.2	20.4	18.5	17.4	16.7	17.1
4	432	6.7	8.8	14.6	32.4	9.7	20.1	7.6
5	432	0.7	0.9	3.2	6.7	5.8	32.1	50.6
6	433	16.4	24.7	14.5	14.8	4.2	12.0	13.4
7	433	0.9	1.6	6.5	20.6	10.2	33.9	26.3
8	433	0.2	0.5	2.5	3.5	2.8	23.6	67.0
9	433	29.3	32.8	14.3	8.8	4.6	3.9	6.2
10	433	6.7	12.2	9.2	19.4	26.8	19.6	6.0
11	432	7.2	5.3	4.4	8.6	15.3	31.5	27.8
12	433	4.8	10.9	24.2	14.1	10.9	17.1	18.0
13	433	1.2	3.0	8.5	27.5	8.8	31.6	19.4
14	433	3.9	8.5	11.8	14.8	11.1	26.3	23.6
15	432	8.3	16.0	23.8	15.3	10.9	13.7	12.0

---

[1] See key to items.

Table IV-53

SCHAEFER BEHAVIOR INVENTORY
INTERITEM AND ITEM-SUBTOTAL CORRELATIONS
(Item Ns range from 432 to 433)

Item[1]	Task Orientation						Extraversion-Introversion							Hostility-Tolerance				
	1	4	7	10	13	Sub-total	2	5	8	11	14	Sub-total	Sub-total[2]	3	6	9	12	15
Task Orientation																		
4	32																	
7	24	33																
10	21	42	21															
13	30	32	33	14														
Subtotal	39	54	40	36	39													
Extraversion-Introversion																		
2	19	13	21	08	13	22												
5	15	25	21	08	17	26	51											
8	08	15	19	08	10	18	46	61										
11	06	11	13	22	02	17	17	19	20									
14	07	08	11	02	13	12	34	40	33	14								
Subtotal	15	20	24	15	16	25	50	59	55	22	40							
Subtotal[2]	15	19	23	08	18	25	53	63	57	—	43							
Hostility-Tolerance																		
3	-04	-18	-04	-36	-11	-23	01	-11	-10	-14	-09	-13	-10					
6	03	-04	04	-17	02	-04	06	-02	02	-23	-01	-08	01	15				
9	-04	-14	01	-20	-04	-14	-12	-12	-09	-20	-13	-21	-16	27	28			
12	-09	-24	-12	-39	-09	-30	-02	-08	-05	-17	-05	-12	-07	65	14	28		
15	-09	-27	-11	-41	-03	-29	-06	-13	-10	-21	-04	-16	-10	48	19	32	54	
Subtotal	-07	-25	-06	-45	-07	-29	-04	-13	-09	-28	-09	-11	-15	56	25	41	58	55

[1] See key to items

[2] Revised Extraversion-Introversion Scale score. Item 11 omitted.

Table IV-54

SCHAEFER BEHAVIOR INVENTORY
ROTATED FACTOR LOADINGS[1]
THREE FACTORS EXTRACTED

(Item Ns range from 432 to 433)

Item[2]	FI	FII	FIII	h^2
1	-01	06	66	44
2	-03	74	17	58
3	-77	-03	-07	60
4	27	09	68	55
5	09	82	17	70
6	-43	01	16	21
7	-01	17	66	46
8	06	79	08	63
9	-57	-20	09	37
10	57	-04	43	51
12	-79	02	-16	64
13	-02	09	66	45
14	06	66	00	43
15	-76	-04	-13	60
PCT. V	19.4	16.9	15.0	

Three factors accounted for 51.2% of the total variance.

---

[1] Principal components factor analysis followed by a varimax rotation.

[2] See key to items.

Table IV-55

SCHAEFER BEHAVIOR INVENTORY
ITEMS LOADING HIGHEST ON EACH FACTOR

(Item Ns range from 432 to 433)

		Loading
FACTOR I	(19.4%) Hostility-Tolerance	
12.	Complains or whines if he (she) can't get his (her) own way	-.79
3.	Gets impatient or unpleasant if he (she) can't get what he (she) wants when he (she) wants it	-.77
15.	Gets angry when he (she) has to wait his (her) turn or share with others	-.76
9.	Stays angry for a long time after an argument	-.57
10.	Goes from one thing to another; quickly loses interest in things	-.43
6.	Slow to forgive when offended	-.57*
FACTOR II	(16.9%) Extraversion-Introversion	
5.	Likes to take part in activities with others	.82
8.	Enjoys being with others	.79
2.	Tries to be with another person or group of people	.74
14.	Does not wait for others to approach him (her), but makes the first friendly move	.66
FACTOR III	(15.0%) Task Orientation	
4.	Stays with a job until he (she) finishes it	.68
7.	Becomes very involved in what he (she) is doing	.66
1.	Pays attention to what he (she) is doing when other things are going on around him (her)	.66
13.	Watches carefully when a home visitor is showing how to do something	.66
10.	Goes from one thing to another; quickly loses interest in things	.43*

Three factors accounted for 51.2% of the total variance.

---

*Item 10 loads on two factors.

Table IV-58

DESCRIPTIVE DATA

	SCHAEFER BEHAVIOR INVENTORY												PUPIL OBSERVATION CHECKLIST							
	TASK ORIENTATION (possible range=5-35)				EXTRAVERSION-INTROVERSION (possible range=4-28)				HOSTILITY-TOLERANCE (possible range=5-35)				TEST ORIENTATION[2] (possible range=5-35)				SOCIABILITY (possible range=4-28)			
	N	Mean	SD	SE	N	Mean	SD	SE	N	Mean	SD	SE	N	Mean	SD	SE	N	Mean	SD	SE
AGE:[1]																				
3-1/2	44	23.3	5.2	.78	44	24.4	2.8	.42	44	19.6	6.0	.91	44	20.4	7.7	1.16	44	16.9	5.0	.75
4	106	23.3	4.9	.47	106	23.5	4.3	.42	106	19.3	5.9	.57	106	22.7	7.5	.73	106	16.0	7.0	.68
4-1/2	128	23.5	5.2	.46	128	23.4	4.3	.38	128	19.5	6.3	.56	128	24.8	7.7	.68	128	18.2	6.7	.59
5	104	24.2	4.8	.47	104	23.3	3.8	.37	104	18.4	5.9	.58	103	25.5	6.5	.64	103	19.1	5.6	.55
5-1/2	44	24.7	4.5	.68	44	24.3	3.0	.45	44	18.9	6.9	1.00	43	26.8	5.6	.85	44	20.8	5.4	.81
TOTAL:	426	23.7	4.9	.24	426	23.6	3.9	.19	426	19.1	6.2	.30	424	24.2	7.4	.36	425	18.0	6.4	.31
SEX:																				
M	221	23.8	4.6	.31	221	23.2	3.9	.26	221	19.0	6.1	.26	219	23.5	7.6	.52	220	18.1	6.2	.43
F	212	23.6	5.3	.36	212	23.9	4.1	.28	212	19.2	6.3	.43	212	25.1	7.0	.48	212	17.9	6.3	.43
TOTAL:	433	23.7	5.0	.24	433	23.6	4.0	.19	433	19.1	6.2	.30	431	24.3	7.4	.35	432	18.0	6.3	.31

[1] Age intervals: 3-1/2 (38-45 months); 4 (46-51 months); 4-1/2 (52-57 months); 5 (58-63 months); 5-1/2 (64-70 months); seven children with ages below 38 months or above 70 months were excluded from the total sample for this analysis.

[2] One control child was omitted from the Test Orientation scale analysis because of 40% missing data

Table IV-59

SCHAEFER BEHAVIOR INVENTORY
FALL-SPRING GROWTH

	Six-Site Analysis				Four-Site Analysis			
	Home Start (N=192)		Control (N=130)		Home Start (N=132)		Head Start (N=112)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
ask Orientation								
Fall	23.50	4.78	23.18	5.03	23.61	4.86	23.82	4.64
Spring	24.35	5.03	22.74	5.26	24.80	4.94	23.84	4.16
Difference	.85	4.93	-.44	4.86	1.20	5.04	.02	4.35
t ratio	2.39*		-1.02		2.72*		.04	
xtraversion-Introversion								
Fall	22.85	3.84	23.14	4.35	22.98	3.69	23.60	3.37
Spring	23.70	3.68	23.54	4.23	23.74	3.54	23.47	3.74
Difference	.85	4.02	.39	4.63	.76	4.04	-.13	3.51
t ratio	2.92*		.95		2.14*		-.38	
ostility-Tolerance								
Fall	18.92	5.92	18.47	5.92	19.21	6.14	19.24	5.70
Spring	18.74	6.29	19.47	6.02	18.73	6.49	19.19	6.17
Difference	-.19	5.92	1.00	4.97	-.48	5.69	-.05	4.93
t ratio	-.43		2.27*		-.95		-.12	

*p<.05

Table IV-60

SCHAEFER BEHAVIOR INVENTORY
Item Means--Home Start and Control, Six Sites
Fall 1973, Spring 1974 and Fall-Spring Gain[1]

Item	Home Start (N=191)				Control (N=126)			
Task Orientation	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
1. Pays attention to what he is doing when other things are going on	4.45	4.75	.31*	1	4.52	4.52	-.01	1
7. Becomes very involved in what he is doing	5.38	5.60	.21	2	5.28	5.11	-.17	5
4. Stays with a job until he finishes it	4.21	4.38	.17	3	4.06	3.94	-.12	3
13. Watches carefully when shown how to do something	5.15	5.28	.13	4	5.13	5.00	-.13	4
10. Does not quickly lose interest in things	4.31	4.34	.03	5	4.19	4.17	-.02	2

	Home Start (N=190)				Control (N=127)			
Extraversion-Introversion	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
14. Doesn't wait for others to approach but makes first friendly move	4.66	4.91	.25	1	5.01	5.09	.08	2
2. Tries to be with another person or group of people	5.83	6.06	.23*	2	5.67	5.97	.30*	1
5. Likes to take part in activities with others	5.96	6.18	.22*	3	6.09	6.15	.06	3
8. Enjoys being with others	6.40	6.58	.16	4	6.38	6.33	-.05	4

	Home Start (N=189)				Control (N=128)			
Hostility-Tolerance	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
6. Slow to forgive when offended	3.34	3.60	.26	1	2.97	3.40	.43*	1
9. Stays angry for long time after argument	2.38	2.63	.25	2	2.36	2.77	.41*	2
15. Gets angry when he's to wait turn or share with others	3.71	3.80	.09	3	3.92	4.24	.32*	3
3. Gets impatient or unpleasant if can't get what wants when wants it	4.87	4.49	-.38*	4	4.67	4.58	-.09	5
12. Complains or whines if can't get his own way	4.62	4.22	-.41*	5	4.55	4.48	-.07	4

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*$p \leq .05$

[1] Items within each scale listed in order of decreasing mean gain for Home Start

Table IV-61

SCHAEFER BEHAVIOR INVENTORY
Item Means--Home Start and Head Start, Four Sites
Fall 1973, Spring 1974 and Fall-Spring Gain[1]

Item	Home Start (N=132)				Head Start (N=111)			
Task Orientation	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
1. Pays attention to what he is doing when other things are going on	4.34	4.80	.46*	1	4.61	4.70	.09	2
7. Becomes very involved in what he is doing	5.48	5.70	.23	2	5.50	5.56	.06	3
13. Watches carefully when shown how to do something	5.20	5.40	.20	3	5.23	4.98	-.24	5
4. Stays with a job until he finishes it	4.30	4.47	.17	4	3.95	4.18	.23	1
10. Does not quickly lose interest in things	4.30	4.42	.13	5	4.53	4.41	-.12	4

	Home Start (N=131)				Head Start (N=110)			
Extraversion-Introversion	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
14. Doesn't wait for others to approach but makes first friendly move	4.66	4.90	.24	1	4.93	4.87	-.05	3.5
5. Likes to take part in activities with others	5.96	6.19	.23	2	6.17	6.14	-.04	2
8. Enjoys being with others	6.49	6.63	.15	3	6.55	6.51	-.05	3.5
2. Tries to be with another person or group of people	5.88	6.02	.14	4	5.95	5.95	.01	1

	Home Start (N=130)				Head Start (N=111)			
Hostility-Tolerance	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
6. Slow to forgive when offended	3.44	3.76	.32	1	3.27	3.52	.25	1
15. Gets angry when he's to wait turn or share with others	3.78	3.88	.11	2	3.77	3.85	.08	2
9. Stays angry for long time after argument	2.46	2.53	.07	3	2.47	2.46	-.01	3
12. Complains or whines if can't get his own way	4.57	4.15	-.42*	4	4.70	4.55	-.15	4
3. Gets impatient or unpleasant if can't get what wants when wants it	4.96	4.40	-.56*	5	5.04	4.81	-.23	5

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*p ≤ .05

[1] Items within each scale listed in order of decreasing mean gain for Home Start.

Table IV-62

SCHAEFER BEHAVIOR INVENTORY
FACTOR ANALYSIS OF ITEM CHANGE
ITEMS LOADING HIGHEST ON EACH FACTOR

(N=420)

		Loading
FACTOR I	(12.1%)	
8.	Enjoys being with others.	.80
2.	Trys to be with another person or group of people.	.66
5.	Likes to take part in activities with others.	.58
14.	Does not wait for others to approach him (her), but makes first friendly move.	.56
FACTOR II	(9.3%)	
3.	Gets impatient or unpleasant if he (she) can't get what he (she) wants when he (she) wants it.	.75
12.	Complains or whines if he (she) can't get his (her) own way.	.54
1.	Pays attention to what he (she) is doing when other things are going on around him (her).	-.35*
11.	Watches rather than joins in.	.34*
FACTOR III	(9.5%)	
10.	Does not quickly lose interest.	.58
4.	Stays with a job until he (she) finishes it.	.57
7.	Becomes very involved in what he (she) is doing.	.55
13.	Watches carefully when home visitor is showing how to do something.	.50
1.	Pays attention to what he (she) is doing when other things are going on around him (her).	.35*
FACTOR IV	(7.8%)	
6.	Slow to forgive when offended.	.76
11.	Watches rather than joins in.	.38
4.	Stays with a job until he (she) finishes it.	-.36*

(continued)

Table IV-62

(continued)

		Loading
FACTOR V	(9.7%)	
15.	(Does not) get angry when he (she) has to wait his (her) turn or share with others.	.65
9.	(Does not) stay angry for a long time after an argument.	.51
1.	Pays attention to what he (she) is doing when other things are going on around him (her).	.51
12.	(Does not) whine when he (she) can't get his (her) own way.	.50*

Five factors accounted for 48.0% of the total variance.

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*Item also loads on another factor.

Table IV-63

HIGH/SCOPE PUPIL OBSERVATION CHECKLIST
PERCENT RESPONSES IN EACH SCORING CATEGORY

Item	N	Rating						
		1	2	3	4	5	6	7
Cooperative	431	4.6	8.8	9.3	10.4	15.5	30.6	20.6
Sociable	432	8.6	12.3	14.1	10.4	11.8	24.1	18.7
Outgoing	432	5.6	10.9	15.5	14.6	16.4	24.1	13.0
Involved	430	3.3	6.7	10.2	14.7	21.2	27.7	16.3
Agreeable	430	2.6	5.8	8.6	13.5	18.6	33.7	17.2
Active	429	2.1	6.1	6.5	17.2	18.2	26.8	23.1
Keeps Trying	431	6.5	9.0	13.0	15.1	14.2	27.8	14.4
Talkative	432	12.7	16.0	16.2	15.0	16.9	13.2	10.0
Attentive	427	4.4	8.7	8.4	16.2	20.6	31.9	9.8

Table IV-64

HIGH/SCOPE PUPIL OBSERVATION CHECKLIST INTERITEM AND ITEM-SUBTOTAL CORRELATIONS

(Item Ns range from 427 to 432)

	Test Orientation Subtotal	Sociability Subtotal	Test Orientation					Sociability		
			Coop	Invol	Agree	Trying	Atten	Soc	Outgo	Active
Sociability Subtotal	65									
Cooperative	80	66								
Involved	78	59	73							
Agreeable	79	59	80	69						
Keeps Trying	76	61	75	72	70					
Attentive	77	41	67	75	64	69				
Sociable	65	86	68	59	60	62	45			
Outgoing	72	83	72	69	66	66	52	89		
Active	42	66	45	41	41	42	23	63	59	
Talkative	40	75	44	37	36	43	23	72	69	60

Table IV-65

HIGH/SCOPE PUPIL OBSERVATION CHECKLIST ROTATED FACTOR LOADINGS[1]

(Item Ns range from 427 to 432)

Item	FI	FII	h^2
Cooperative	81	39	81
Sociable	46	80	85
Outgoing	56	74	85
Involved	84	29	79
Agreeable	81	31	75
Active	18	81	68
Keeps Trying	80	34	76
Talkative	14	88	80
Attentive	89	05	80
PCT. V	44.7	34.1	

Two factors accounted for 78.8% of the total variance.

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[1] Principal components factor analysis followed by a varimax rotation.

Table IV-66

HIGH/SCOPE PUPIL OBSERVATION CHECKLIST ITEMS LOADING HIGHEST ON EACH FACTOR

(Item Ns range from 427 to 432)

		Loading
FACTOR I	(44.7%)	
9.	Attentive - inattentive	.89
4.	Involved - indifferent	.84*
5.	Defensive - agreeable	.81*
1.	Resistive - cooperative	.81*
7.	Gives up - keeps trying	.80*
FACTOR II	(34.1%)	
8.	Quiet - talkative	.88
6.	Active - passive	.81
2.	Shy - sociable	.80*
3.	Outgoing - withdrawn	.74*

Two factors accounted for 78.8% of the total variance.

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*Item also has substantial loading on the other factor.

Table IV-69

PUPIL OBSERVATION CHECKLIST
FALL-SPRING GROWTH

	Six-Site Analysis				Four-Site Analysis			
	Home Start (N=192)		Control (N=132)		Home Start (N=130)		Head Start (N=112)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Test Orientation								
Fall	22.55	8.66	23.08	8.06	23.68	8.63	23.37	7.89
Spring	23.96	7.13	24.49	7.52	24.55	7.26	24.65	7.47
Difference	1.41	6.91	1.41	7.99	.87	6.69	1.28	7.76
t ratio	2.76*		1.96		1.45		1.72	
Sociability								
Fall	17.31	7.07	16.90	6.68	17.70	7.29	17.43	6.93
Spring	17.71	6.03	18.28	6.48	18.41	6.12	18.42	6.59
Difference	.40	5.97	1.39	6.43	.72	6.28	.99	7.62
t ratio	.93		2.39*		1.29		1.36	

*p<.05

Table IV-70

PUPIL OBSERVATION CHECKLIST
Item Means--Home Start and Control, Six Sites
Fall 1973, Spring 1974 and Fall-Spring Gain[1]

Item	Home Start (N=184)				Control (N=124)			
	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
Test Orientation								
7. Keeps trying	4.12	4.53	.41*	1	4.29	4.60	.31	2.5
1. Cooperative	4.55	4.88	.33*	2	4.63	4.94	.31	2.5
4. Involved	4.57	4.85	.29*	3	4.72	4.98	.27	3
5. Agreeable	4.78	5.02	.23	4	4.81	5.14	.32	1
9. Attentive	4.53	4.67	.15	5	4.63	4.82	.19	4

	Home Start (N=188)				Control (N=124)			
	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
Sociability								
2. Sociable	4.16	4.37	.21	1	4.04	4.70	.66*	1
6. Active	4.95	5.15	.20	2	4.95	5.15	.20	3
3. Outgoing	4.34	4.41	.07	3	4.12	4.59	.47*	2
8. Talkative	3.86	3.78	-.07	4	3.78	3.84	.06	4

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*$p \le .05$

[1] Items within each scale listed in order of decreasing mean gain for Home Start.

Table IV-71

PUPIL OBSERVATION CHECKLIST
Item Means--Home Start and Head Start, Four Sites
Fall 1973, Spring 1974 and Fall-Spring Gain[1]

Item	Home Start (N=125)				Head Start (N=110)			
	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
Test Orientation								
7. Keeps Trying	4.37	4.64	.27	1	4.38	4.74	.35*	1
1. Cooperative	4.74	4.99	.25	2	4.89	5.09	.20	4
4. Involved	4.78	5.00	.22	3	4.63	4.94	.31	2
5. Agreeable	5.02	5.15	.13	4	4.99	5.12	.13	5
9. Attentive	4.77	4.77	.00	5	4.48	4.77	.29	3

Item	Home Start (N=128)				Head Start (N=111)			
	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
Sociability								
6. Active	5.11	5.37	.26	1	4.86	5.20	.33	1.5
2. Sociable	4.29	4.52	.23	2	4.32	4.57	.24	3
8. Talkative	3.80	3.97	.16	3	3.77	4.11	.33	1.5
3. Outgoing	4.49	4.56	.07	4	4.47	4.55	.08	4

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*$p \leq .05$

[1] Items within each scale listed in order of decreasing mean gain for Home Start.

Table IV-72

PUPIL OBSERVATION CHECKLIST
FACTOR ANALYSIS OF ITEM CHANGE
ITEMS LOADING HIGHEST ON EACH FACTOR

		Loading
FACTOR I	(36.6%)	
1.	Cooperative	.82
5.	Agreeable	.82
4.	Involved	.78
9.	Attentive	.76
7.	Keeps trying	.67
3.	Outgoing	.38*
2.	Sociable	.37*
FACTOR II	(28.7%)	
8.	Talkative	.86
3.	Outgoing	.76
2.	Sociable	.75
6.	Active	.72

Two factors accounted for 65.0% of the total variance.

---

*Item also loads on another factor.

Table IV-73

HIGH/SCOPE HOME ENVIRONMENT SCALE
PERCENT RESPONSES

1. HOW MANY CHILDREN'S BOOKS ARE IN YOUR HOME THAT ______ (Child's Name) CAN LOOK AT?

			Hm	C	Hd
Would you say:	41.1	fifteen or more	37.5	34.1	55.4
or:	37.2	several, but not fifteen	40.1	35.7	33.9
or:	21.7	three or fewer	22.4	30.2	10.7

2. HOW OFTEN WOULD YOU SAY SOMEONE READS STORIES TO ______ (Child's Name)?

			Hm	C	Hd
Would you say:	30.2	almost every day	32.3	22.3	35.7
or:	38.7	several times a week	41.7	32.3	41.1
or:	31.1	not that often?	26.0	45.4	23.2

3. HOW OFTEN DO YOU AND ______ (Child's Name) TALK ABOUT THE PICTURES HE (SHE) MAKES, WHAT HE (SHE) DOES DURING THE DAY, HIS (HER) FRIENDS, AND SO ON?

			Hm	C	Hd
Would you say:	28.2	for about a half-hour or more every day	30.7	21.7	31.5
or:	45.8	for a few minutes every day	43.2	41.1	55.9
or:	25.9	several times a week or less?	26.0	37.2	12.6

4. HOW OFTEN DO YOU LET ______ (Child's Name) HELP YOU WHILE YOU ARE COOKING, CLEANING THE HOUSE, WASHING DISHES, OR DOING OTHER HOUSEHOLD TASKS?

			Hm	C	Hd
Would you say:	50.5	almost every day	54.7	52.3	41.1
or:	21.9	several times a week	22.4	17.7	25.9
or:	27.6	not that often?	22.9	30.0	33.0

(continued)

Table IV- 73
(continued)

5. I'M GOING TO READ A LIST OF HOUSEHOLD TASKS THAT CHILDREN SOMETIMES HELP WITH. PLEASE TELL ME WHICH OF THEM ______________ (Child's Name) HAS HELPED YOU WITH IN THE LAST MONTH.

Yes	No			Hm	C	Hd
34.6	65.4	clean or peel food for a meal	Yes -	41.9	23.8	34.8
			No -	58.1	76.2	65.2
33.5	66.5	mix or bake things, like cookies		38.7	23.1	36.6
				61.3	76.9	63.4
34.8	65.2	stir things while they cook, like soup, pudding, or jello		41.1	29.2	30.4
				58.9	70.8	69.6
79.2	20.8	find food on shelves at the grocery store for you		82.2	74.6	79.5
				17.8	25.4	20.5
77.9	22.1	take off the dishes after meals		81.2	73.8	76.8
				18.7	26.2	23.2
76.5	23.5	put clean clothes into the right drawers or shelves		80.2	70.8	76.8
				19.8	29.2	23.2

6. HOW OFTEN DO YOU JOIN IN THE PLAY ACTIVITIES THAT ______________ (Child's Name) IS INVOLVED IN, SUCH AS PLAYING GAMES, DRAWING PICTURES, OR SINGING?

			Hm	C	Hd
Would you say:	50.7	almost every day	54.2	48.5	47.3
or:	32.7	once a week or so	31.8	27.7	40.2
or:	16.6	not that often?	14.1	23.8	12.5

7. HOW MUCH TIME DOES ______________ (Child's Name) WATCH TELEVISION?

			Hm	C	Hd
Would you say:	45.5	about 2 hours a day or more	47.4	46.0	41.7
or:	35.6	every day but not for two hours	34.2	31.0	43.5
or:	18.9	several times a week or less?	18.4	23.0	14.8

8. HOW OFTEN DO YOU TALK WITH ______________ (Child's Name) ABOUT HIS (HER) FEELINGS TOWARDS THINGS, SUCH AS HIS (HER) FEARS, PEOPLE OR THINGS HE (SHE) ESPECIALLY LIKES, OR PEOPLE OR THINGS HE (SHE) ESPECIALLY DOESN'T LIKE?

			Hm	C	Hd
Would you say:	50.9	almost every day	55.7	45.4	49.1
or:	30.0	several times a week	28.6	29.2	33.0
or:	19.1	not that often?	15.6	25.4	17.9

(continued)

Table IV- 73
(continued)

9. I AM GOING TO READ TO YOU A LIST OF THINGS CHILDREN CAN PLAY WITH. PLEASE TELL ME WHICH ONES ______________ (Child's Name) HAS A CHANCE TO PLAY WITH AT HOME.

(See next page for percent responses by group)

	Yes	No	
a.	94.0	6.0	crayons and paper
b.	66.4	33.6	scissors
c.	66.8	33.2	scotch tape, paste, or stapler
d.	55.8	44.2	jigsaw puzzles
e.	82.9	17.1	old picture catalogs to read,and cut up, like Sears, Wards, or others
f.	49.5	50.5	paint or magic markers
g.	52.1	47.9	clay or playdough
h.	57.6	42.4	"put-together" toys like tinkertoys, Legos, pegboards, or beads for stringing
i.	50.5	49.5	hammer and nails with some wood scraps
j.	44.2	55.8	yarn, thread, and cloth scraps for knitting or sewing
k.	66.1	33.9	make believe toys out of milk cartons, tin cans, or egg cartons
l.	44.7	55.3	plants of his (her) own in a pot or garden

10. HOW OFTEN DO YOU PLAY "HOUSE", "STORE", "DOCTOR", OR OTHER MAKE-BELIEVE GAMES WITH ______________ (Child's Name)?

			Hm	C	Hd
Would you say:	9.7	almost every day	11.8	9.4	6.4
or:	24.1	several times a week	26.7	20.5	23.6
or:	66.3	not that often?	61.5	70.1	70.0

11. NOW I'M GOING TO READ A LIST OF THINGS CHILDREN START TO LEARN AS THEY GROW TO BE SCHOOL AGE. PLEASE TELL ME WHICH OF THEM YOU HAVE TRIED TO TEACH ______________ (Child's Name) IN THE PAST MONTH.

(See next page for percent responses by group)

	Yes	No	
a.	82.5	17.5	nursery rhymes, prayers, or songs
b.	86.6	13.4	colors
c.	62.1	37.9	shapes, such as circles, squares, or triangles
d.	60.0	40.0	to write his (her) name
e.	49.4	50.6	to remember his (her) address and telephone number
f.	95.5	4.5	to count things
g.	65.4	34.6	to recognize numbers in books
h.	78.0	22.0	to say the "abc's"
i.	53.7	46.3	to recognize letters in books
j.	45.7	54.3	to read words on signs or in books
k.	73.6	26.4	ideas like "big-little", "up-down", "before-after", and so on

(continued)

Table IV- 73
(continued)

HIGH/SCOPE HOME ENVIRONMENT SCALE

Percent Responses by Group

9. Playthings

		Hm	C	Hd
a.	Yes -	96.9	87.7	96.4
	No -	3.1	12.3	3.6
b.	Yes -	82.3	46.2	62.5
	No -	17.7	53.8	37.5
c.	Yes -	78.6	50.8	65.2
	No -	21.4	49.2	34.8
d.	Yes -	58.3	46.9	61.6
	No -	41.7	53.1	38.4
e.	Yes -	80.7	82.3	87.5
	No -	19.3	17.7	12.5
f.	Yes -	54.2	37.7	55.4
	No -	45.8	62.3	44.6
g.	Yes -	54.7	42.3	58.9
	No -	45.3	57.7	41.1
h.	Yes -	57.3	49.2	67.9
	No -	42.7	50.8	32.1
i.	Yes -	50.5	51.5	49.1
	No -	49.5	48.5	50.9
j.	Yes -	47.4	39.2	44.6
	No -	52.6	60.8	55.4
k.	Yes -	68.7	61.5	67.0
	No -	31.2	38.5	33.0
l.	Yes -	47.4	39.2	46.4
	No -	52.6	60.8	53.6

11. Mother Teaches

		Hm	C	Hd
a.	Yes -	82.7	74.8	90.9
	No -	17.3	25.2	9.1
b.	Yes -	91.9	77.5	89.3
	No -	8.1	22.5	10.7
c.	Yes -	74.7	45.0	61.5
	No -	25.3	55.0	38.5
d.	Yes -	62.2	62.0	54.1
	No -	37.8	38.0	45.9
e.	Yes -	51.4	41.1	56.0
	No -	48.6	58.9	44.0
f.	Yes -	96.8	93.0	96.3
	No -	3.2	7.0	3.7
g.	Yes -	69.1	57.4	68.5
	No -	30.9	42.6	31.5
h.	Yes -	81.2	72.9	78.5
	No -	18.8	27.1	21.5
i.	Yes -	57.4	43.1	60.0
	No -	42.6	56.9	40.0
j.	Yes -	53.9	34.6	44.5
	No -	46.1	65.4	55.5
k.	Yes -	82.4	67.4	65.8
	No -	17.6	32.6	34.2

Table IV-74

HIGH/SCOPE HOME ENVIRONMENT SCALE
ITEMS SCORED FOR EACH SCALE

HES #1 - Warm mother and child involvement

3. Mother and child talk about child's activities
4. Child helps with household tasks
6. Mother joins child's play activities
8. Mother talks with child about child's feelings
10. Mother plays make-believe games with child

HES #2 - Playthings

9b. Child can play with scissors
9c. Child can play with scotch tape, paste, or stapler
9d. Child can play with jigsaw puzzles
9f. Child can play with paint or magic markers
9g. Child can play with clay or play-dough
9h. Child can play with "put-together" toys

HES #3 - Mother teaches child

11d. Mother teaches child to write name.
11e. Mother teaches child to remember address
11g. Mother teaches child to recognize numbers
11h. Mother teaches child to say the "ABC's"
11i. Mother teaches child to recognize letters
11j. Mother teaches child to read words

HES #4 - Child does household tasks

5a. Child helps mother clean and peel food
5b. Child helps mother mix and bake things
5c. Child helps mother stir foods
5d. Child helps mother find food on shelves in store
5e. Child helps mother take off dishes after meal
5f. Child helps mother by putting clean clothes in drawers.

HES #5 - Books and time reads

1. Number of children's books at home
2. Someone reads stories to child

HES #6 - Television in home

7. Child watches television

Table IV-75

HIGH/SCOPE HOME ENVIRONMENT SCALE
ITEM INTERCORRELATIONS
(Item Ns range from 422 to 434)

	Warm Mother Involvement						Playthings							Mother Teaching							Child Does Household Tasks							Books and Reading		
	3	4	6	8	10	Sub-total	9b	9c	9d	9f	9g	9h	Sub-total	11d	11e	11g	11h	11i	11j	Sub-total	5a	5b	5c	5d	5e	5f	Sub-total	1	2	Sub-total
Warm Mother Involvement																														
4	11																													
6	26	29																												
8	19	22	29																											
10	27	13	31	21																										
Subtotal	45	43	59	50	45																									
Playthings																														
9b	11	15	16	15	07	17																								
9c	08	11	16	10	04	14	36																							
9d	12	12	17	21	11	20	17	17																						
9f	05	10	13	05	11	19	25	25	15																					
9g	16	00	02	09	04	14	17	15	16	20																				
9h	14	10	19	14	23	23	09	15	20	14	16																			
Subtotal	21	19	25	23	19	33	36	38	29	34	29	25																		
Mother Teaching																														
11d	05	06	09	03	01	03	14	08	10	06	13	03	07																	
11e	14	-02	09	11	07	06	12	12	13	12	18	11	14	24																
11g	17	14	14	13	13	11	12	13	22	08	14	15	13	32	19															
11h	01	00	01	08	00	02	14	02	08	07	12	03	04	18	18	27														
11i	18	13	15	05	15	14	16	17	21	21	16	22	21	31	28	48	26													
11j	18	05	14	11	20	13	12	15	12	19	06	11	12	27	24	30	12	36												
Subtotal	13	04	06	07	03	24	09	12	07	07	11	06	34	70	65	75	70	75	67											
House Tasks																														
5a	12	17	12	09	20	21	25	17	06	13	05	12	23	12	13	16	02	14	17	10										
5b	13	21	22	12	11	22	24	25	11	19	07	13	29	09	02	12	02	19	11	13	23									
5c	13	13	08	03	17	19	11	11	00	21	05	07	16	06	12	08	01	15	24	15	20	24								
5d	08	07	18	20	12	17	21	18	15	12	11	10	15	16	18	11	11	10	12	17	08	15	05							
5e	06	16	07	03	10	13	04	03	06	10	01	02	09	09	18	14	11	17	14	17	06	04	00	05						
5f	10	22	11	12	06	18	21	18	07	08	05	12	21	14	16	10	05	11	13	09	16	09	06	19	08					
Subtotal	21	27	24	18	26	41	30	29	13	25	13	18	40	18	20	20	11	22	24	37	34	35	27	29	18	30				
Books&Reading																														
1	21	19	20	06	09	21	23	22	29	23	12	24	40	06	09	14	04	18	10	10	14	14	05	22	07	11	20			
2	26	23	32	21	30	36	17	15	14	17	08	28	30	02	16	21	03	28	24	10	23	20	20	15	05	10	27	39		
Subtotal	26	24	28	17	23	41	25	23	27	25	11	31	41	01	11	13	01	19	14	25	20	20	15	20	06	12	33	40	40	
Television																														
12	-10	-04	-09	-08	-08	-13	01	-01	-06	-08	-08	-08	-09	-10	-09	-13	-04	-06	-08	-13	-06	-03	02	-04	-03	-09	-07	-02	00	-01

Table IV-76

HIGH/SCOPE HOME ENVIRONMENT SCALE
ROTATED FACTOR LOADINGS[1]
FOUR FACTORS SPECIFIED

(Item Ns range from 422 to 434)

Item[2]	FI	FII	FIII	FIV	h^2
3	53	-17	-13	-05	34
4	43	07	-19	22	29
6	66	00	-09	16	48
8	59	-01	16	26	45
10	64	-07	-25	-15	51
9b	04	-07	-24	67	52
9c	02	-04	-28	61	47
9d	34	-23	16	32	31
9f	01	-13	-41	35	33
9g	04	-28	05	33	21
9h	42	-14	-07	13	23
11d	-05	-58	-06	16	38
11e	05	-55	-03	14	34
11g	20	-66	-07	04	49
11h	-07	-53	15	16	35
11i	16	-68	-24	05	55
11j	16	-52	-38	-05	45
5a	15	-08	-51	18	33
5b	18	03	-50	33	40
5c	06	-08	-70	-05	52
5d	20	-15	08	49	31
5e	13	-31	-04	-01	12
5f	14	-10	-06	43	22
PCT. V	9.8	10.9	7.7	8.8	

Four factors accounted for 37.3% of the total variance.

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[1] Principal components factor analysis followed by a varimax rotation.

[2] See key to items.

Table IV-77

HIGH/SCOPE HOME ENVIRONMENT SCALE
ITEMS LOADING HIGHEST ON EACH FACTOR
(FOUR FACTORS SPECIFIED)

(Item Ns range from 422 to 434)

		Loading
FACTOR I	(9.8%)	
6.	Mother joins child's play activities	.66
10.	Mother plays make-believe games with child	.64
8.	Mother talks with child about child's feelings	.59
3.	Mother and child talk about child's activities	.53
4.	Child helps with household tasks	.43
9h.	Child can play with "put-together" toys	.42
9d.	Child can play with jigsaw puzzles	.34*
FACTOR II	(10.9%)	
11i.	Mother teaches child to recognize letters	.68
11g.	Mother teaches child to recognize numbers	.66
11d.	Mother teaches child to write name	.58
11e.	Mother teaches child to remember address	.55
11h.	Mother teaches child to say "ABC's"	.53
11j.	Mother teaches child to read words	.52*
5e.	Child helps mother take off dishes after meal	.31
FACTOR III	(7.7%)	
5c.	Child helps mother stir foods	.70
5a.	Child helps mother clean and peel food	.51
5b.	Child helps mother mix and bake things	.50*
9f.	Child can play with paint & magic markers	.41*
11f.	Mother teaches child to read words	.38*
FACTOR IV	(8.9%)	
9b.	Child can play with scissors	.67
9c.	Child can play with scotch tape, paste, or stapler	.61
5d.	Child helps mother find food on shelves in store	.49
5f.	Child helps mother by putting clean clothes in drawers	.43
9f.	Child can play with paint or magic markers	.35*
9g.	Child can play with clay or play-dough	.33*
5b.	Child helps mother mix and bake things	.33*
9d.	Child can play with jigsaw puzzles	.32*

Four factors accounted for 37.3% of the total variance.

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*Item also has substantial loading on another factor.

Table IV-78

HIGH/SCOPE HOME ENVIRONMENT SCALE
DESCRIPTIVE DATA

	HOME ENVIRONMENT SCALE																							
	Scale I[1] WARM MOTHER INVOLVEMENT (possible range=5-15)				Scale II[2] PLAYTHINGS (possible range=6-12)				Scale III[3] FORMAL TEACHING (possible range=6-12)				Scale IV[4] CHILD DOES HOUSEHOLD TASKS (possible range=6-12)				Scale V[5] BOOKS AND READING (possible range=2-6)				Scale VI[6] TELEVISION (possible range=1-3)			
	N*	Mean	SD	SE	N*	Mean	SD	SE	N*	Mean	SD	SE	N*	Mean	SD	SE	N*	Mean	SD	SE	N*	Mean	SD	SE
HOME START	187	10.7	2.3	.17	192	9.9	1.6	.12	176	9.7	1.7	.13	190	9.7	1.4	.10	192	4.2	1.3	.09	190	1.8	.76	.06
CONTROL	127	9.9	2.5	.23	130	8.7	1.7	.15	126	9.1	1.9	.17	130	9.0	1.3	.12	129	3.8	1.4	.12	126	1.7	.81	.08
HEAD START	110	10.3	2.2	.21	112	9.7	1.5	.14	104	9.6	1.8	1.7	112	9.3	1.3	.13	112	4.6	1.2	.11	108	1.8	.71	.07
SEX:																								
M	213	10.3	2.2	.15	221	9.4	1.7	.11	211	9.4	1.8	.12	219	9.3	1.3	.10	220	4.3	1.3	.08	213	1.8	.78	.05
F	211	10.4	2.5	.17	213	9.6	1.7	.12	195	9.6	1.9	.13	213	9.4	1.4	.10	213	4.1	1.3	.09	211	1.7	.74	.05
TOTAL:	424	10.4	2.4	.11	434	9.4	1.7	.08	406	9.5	1.8	.09	432	9.3	1.3	.06	433	4.1	1.3	.06	424	1.8	.76	.03

*Includes only cases where all items in the scale are complete.

[1] Items include 3, 4, 6, 8 and 10.

[2] Items include 9b, 9c, 9d, 9f, 9g and 9h.

[3] Items include 11d, 11e, 11g, 11h, 11i and 11j.

[4] Items include 5a, 5b, 5c, 5d and 5f.

[5] Items include 1 and 2.

[6] Includes item 12.

Table IV-79

HOME ENVIRONMENT SCALE
FALL-SPRING GROWTH

	Six-Site Analysis				Four-Site Analysis			
	Home Start (N=144-180)		Control (N=100-122)		Home Start (N=105-120)		Head Start (N=87-107)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Playthings								
Fall	2.72	1.61	2.39	1.57	2.64	1.59	3.20	1.53
Spring	3.86	1.60	2.73	1.68	3.77	1.55	3.71	1.49
Difference	1.14	1.62	.34	1.32	1.13	1.45	.52	1.26
t ratio	9.03*		.45*		7.94*		3.67*	
Mother Teaches								
Fall	2.91	1.84	2.79	1.91	2.88	1.79	3.36	1.56
Spring	3.71	1.69	3.14	1.92	3.93	1.64	3.62	1.77
Difference	.81	1.60	.35	1.44	1.06	1.55	.26	1.04
t ratio	5.46*		2.20		6.01*		1.66	
Household Tasks								
Fall	3.14	1.30	2.87	1.36	3.06	1.29	3.07	1.26
Spring	3.65	1.41	2.95	1.32	3.63	1.43	3.35	1.28
Difference	.51	1.39	.08	1.25	.57	1.26	.28	1.16
t ratio	5.11*		.77		5.14*		2.52*	
Mother Involved								
Fall	10.60	2.40	10.25	2.51	10.36	2.34	10.74	2.00
Spring	10.68	2.27	9.88	2.57	10.56	2.14	10.32	2.18
Difference	.08	2.24	-.37	2.28	.20	2.14	-.42	2.08
t ratio	.46		-1.75		1.03		-2.11*	
Books								
Fall	3.68	1.31	3.68	1.35	3.66	1.34	4.25	1.29
Spring	4.20	1.26	3.81	1.35	4.25	1.24	4.57	1.16
Difference	.52	1.29	.12	1.23	.60	1.32	.32	1.14
t ratio	5.61*		1.14		5.13*		2.96*	

*$p < .05$

Table IV-80

HOME ENVIRONMENT SCALE
Item Scores--Home Start and Control, Six Sites
Fall 1973, Spring 1974 and Fall-Spring Gain[1]

Item	Home Start, Means (N=191)				Control, Means (N=129)			
Books	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
1. No children's books at home	1.86	2.15	.29*	1	1.84	2.04	.20*	1
2. How often someone reads to child	1.82	2.06	.24*	2	1.84	1.77	-.08	2

	Home Start, Means (N=184)				Control, Means (N=120)			
Mother Involved	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
8. Talking about feelings	2.33	2.41	.08	1	2.22	2.21	-.02	1
4. Helps cook, clean	2.30	2.33	.02	2.5	2.34	2.23	-.11	5
6. Joins in child's games	2.39	2.41	.02	2.5	2.25	2.22	-.03	2.5
10. Plays make-believe games	1.52	1.51	-.01	4	1.47	1.38	-.08	4
3. Talking about child's pictures, friends	2.06	2.03	-.03	5	2.25	2.22	-.03	2.5

	Home Start Percent "Yes" (N=131)				Control Percent "Yes" (N=130)			
Playthings	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
9c Tape, paste, stapler	49	79	30*	1	41	51	10*	2
9b Scissors	59	82	23*	2	36	46	10*	2
9g Clay or playdoh	35	54	20*	3	38	42	04	4
9f Paint or magic markers	36	54	18*	4	46	47	01	5
9d Jigsaw puzzles	47	59	12*	5.5	28	38	10	2
9h Put-together toys	46	58	12*	5.5	50	49	-01	6

	Home Start Percent "Yes" (N=175)				Control Percent "Yes" (N=125)			
Mother Teaches	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
11j Read words	34	53	19*	1	31	35	04	5
11g Recognize numbers	52	68	16*	2	48	58	10*	1
11e Address and telephone number	34	50	15*	3	32	41	09	2
11i Recognize letters	43	57	14*	4	45	43	-02	6
11h ABC's	73	82	09*	5	68	74	06	4
11d Write name	54	62	08	6	55	62	07	3

	Home Start Percent "Yes" (N=189)				Control Percent "Yes" (N=130)			
Household Tasks	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
5c Stir when cooking	27	41	14*	1.5	22	29	07	1.5
5a Clean or peel food	29	42	14*	1.5	29	24	-05	6
5e Clear dishes	71	81	10*	3	67	74	07	1.5
5b Mix or bake	31	39	08	4	21	23	02	3
5f Put clean clothes away	77	80	03	5	74	71	-03	5
5d Find food at store	80	82	02	6	74	75	01	4

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*$p \leq .05$

[1] Items within each scale listed in order of decreasing mean or percent passing for Home Start.

Table IV-81

HOME ENVIRONMENT SCALE
Item Scores--Home Start and Head Start, Four Sites
Fall 1973, Spring 1974 and Fall-Spring Gain[1]

Item	Home Start, Means (N=131)				Head Start, Means (N=112)			
Books	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
1. No children's books at home	1.85	2.18	.34*	1	2.21	2.45	.24*	1
2. How often someone reads to child	1.81	2.07	.26*	2	2.04	2.12	.08	2

	Home Start, Means (N=127)				Head Start, Means (N=109)			
Mother Involved	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
8. Talking about feelings	2.28	2.38	.09	1	2.35	2.30	-.05	2.5
6. Joins in child's games	2.35	2.40	.06	2	2.41	2.37	-.05	2.5
4. Helps cook, clean	2.28	2.33	.05	3	2.29	2.08	-.21*	5
10. Plays make-believe games	1.41	1.45	.04	4	1.51	1.37	-.15*	4
3. Talking about child's pictures, friends	2.04	2.00	-.04	5	2.17	2.20	.03	1

	Home Start Percent "Yes" (N=191)				Head Start Percent "Yes" (N=112)			
Playthings	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
9c Tape, paste, stapler	49	79	30*	1	61	65	04	6
9b Scissors	63	83	21*	2	51	63	12*	2
9g Clay or playdoh	37	55	18*	3	53	59	06	5
9h Put-together toys	37	53	16*	4	60	68	08	3.5
9d Jigsaw puzzles	45	60	15*	5.5	54	62	08	3.5
9f Paint or magic markers	33	47	15*	5.5	42	55	13*	1

	Home Start Percent "Yes" (N=121)				Head Start Percent "Yes" (N=104)			
Mother Teaches	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
11i Recognize letters	40	63	22*	1	48	60	12	1
11e Address and telephone number	31	52	21*	2.5	45	56	11	2
11g Recognize numbers	51	73	21*	2.5	68	68	00	4.5
11j Read words	35	53	18*	4	38	44	06	3
11h ABC's	72	84	12*	5	81	79	-02	6
11d Write name	58	69	11*	6	55	55	00	4.5

	Home Start Percent "Yes" (N=130)				Head Start Percent "Yes" (N=111)			
Household Tasks	Fall	Spring	Gain	Rank	Fall	Spring	Gain	Rank
5c Stir when cooking	25	40	15	1.5	30	31	01	5
5a Clean or peel food	28	43	15*	1.5	21	34	14*	1
5e Clear dishes	64	78	14*	3	65	77	13*	2
5b Mix or bake	29	38	09*	4	35	37	02	4
5f Put clean clothes away	75	81	05	5	80	77	-04	6
5d Find food at store	84	83	-01	6	77	79	03	3

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*$p \leq .05$

[1] Items within each scale listed in order of decreasing mean or percent passing for Home Start.

Table IV-82

HIGH/SCOPE HOME ENVIRONMENT SCALE
FACTOR ANALYSIS OF CHANGE IN CHECKLIST ITEMS
ITEMS LOADING HIGHEST ON EACH FACTOR

(N=364)

		Loading
FACTOR I	(6.3%)	
9a.	Crayons and paper.	.68
9b.	Child can play with scissors.	.50
9c.	Child can play with scotch tape, paste, or stapler.	.59
9f.	Child can play with paint or magic marker.	.38
5a.	Child helps mother clean and peel food.	.32*
FACTOR II	(6.4%)	
11b.	Mother teaches child to recognize colors.	-.75
11f.	Mother teaches child to count.	-.64
11c.	Mother teaches child to recognize shapes.	-.55
11a.	Mother teaches child nursery rhymes.	-.33*
11g.	Mother teaches child to recognize numbers.	-.32*
11h.	Mother teaches child to say "ABC's".	-.31*
FACTOR III	(5.1%)	
5c.	Child helps mother stir foods.	-.67
11j.	Mother teaches child to read words.	-.55
9e.	Old picture catalogs available.	.40
9f.	Child can play with paint or magic marker.	-.33*
11i.	Mother teaches child to recognize letters.	-.32*
FACTOR IV	(7.1%)	
11k.	Ideas like "big/little".	.59
9h.	Child can play with "put-together" toys.	.55
9j.	Yarn, thread, cloth available.	.44
9d.	Child can play with jigsaw puzzles.	.41
11a.	Mother teaches child nursery rhymes.	.39
10.	Mother plays make-believe games with child.	.43*
11i.	Mother teaches child to recognize letters.	.41*
9e.	Old picture catalogs available.	.39*

(continued)

Table IV-82

(continued)

		Loading
FACTOR V	(4.7%)	
5e.	Child helps mother take off dishes after meals.	.73
11e.	Mother teaches child address and phone number.	.50
9j.	Yarn, thread, cloth available.	.31*
FACTOR VI	(4.9%)	
5d.	Child helps mother find food on shelves in store.	-.73
5f.	Child helps mother by putting clean clothes away.	-.67
9b.	Child can play with scissors.	-.32*
FACTOR VII	(5.5%)	
9i.	Hammer, nails, wood.	.76
10.	Mother plays make-believe games with child.	.46
5b.	Child helps mother mix and bake things.	.46
11l.	Child has plants of his (her) own.	.44
5a.	Child helps mother clean and peel food.	.39
FACTOR VIII	(5.8%)	
11d.	Mother teaches child to write name.	-.66
11g.	Mother teaches child to recognize numbers.	-.60
11i.	Mother teaches child to recognize letters.	-.41*
11j.	Mother teaches child to read words.	-.30*
11l.	Child has plants of his (her) own.	-.30*
9j.	Yarn, thread, cloth available.	.30*
FACTOR IX	(5.2%)	
9g.	Child can play with clay or play-doh.	.60
11h.	Mother teaches child to say "ABC's".	.57
11e.	Mother teaches child to remember address and phone number.	.34*
9f.	Child can play with paint or magic marker.	.33*
9d.	Child can play with jigsaw puzzles.	.33*
11i.	Mother teaches child to recognize letters.	.31*

Nine factors accounted for 51.0% of the total variance.

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*Item also loads on another factor.

Table IV-83

HIGH/SCOPE HOME ENVIRONMENT SCALE
FACTOR ANALYSIS OF CHANGE IN RATING ITEMS
ITEMS LOADING HIGHEST ON EACH FACTOR

(N=364)

		Loading
FACTOR I	(15.8%)	
3.	Mother and child talk about child's activities.	.74
2.	Someone reads stories to child.	.55
6.	Mother joins child's play activities.	.47
FACTOR II	(15.3%)	
4.	Child helps with household tasks.	.71
8.	Mother talks with child about child's feelings.	.54
10.	Mother plays make-believe games with child.	.51
6.	Mother joins in child's play activities.	.32*
FACTOR III	(15.7%)	
12.	Child watches television.	.75
1.	Number of children's books at home.	.59
2.	Someone reads stories to child.	.50*

Three factors accounted for 47.0% of the total variance.

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*Item also loads on another factor.

Table IV-84

MOTHER BEHAVIOR OBSERVATION SCALE
ITEMS SCORED FOR EACH SCALE

HES - Observations: Supportive

1. Mother praised child during visits
3. Mother held child in lap during testing
6. Mother encouraged child during testing
8. Mother asked about child's progress during visits
10. Mother talked proudly about child

HES - Observations: Punitive

2. Mother scolded child during visits
4. Mother criticized child during testing
5. Mother coached child during testing
9. Mother threatened child during visits

Table IV-85

MOTHER BEHAVIOR OBSERVATION SCALE
PERCENT RESPONSES IN EACH SCORING CATEGORY

(Item Ns range from 388 to 431)

	Group	Never Observed	Observed Once Or Twice	Observed Three Or More Times	Mother Not Present During Child Testing
1. Mother praised child	Hm	38.9	52.1	8.9	0
	C	48.8	38.8	11.6	.8
	Hd	44.6	44.6	8.9	1.8
	Total	43.4	46.2	9.7	.7
2. Mother scolded child	Hm	53.2	34.7	12.1	0
	C	59.7	32.6	7.0	.8
	Hd	62.5	26.8	8.9	1.8
	Total	57.5	32.0	9.7	.7
3. Mother held child in her lap	Hm	61.4	34.9	3.7	0
	C	73.4	23.4	2.3	.8
	Hd	65.2	29.5	4.5	.9
	Total	66.0	30.1	3.5	.5
4. Mother interfered by negative comments	Hm	78.4	17.4	1.6	2.6
	C	76.0	16.3	3.9	3.9
	Hd	77.3	6.4	1.8	14.5
	Total	77.4	14.2	2.3	6.1
5. Mother interfered by coaching or giving answers	Hm	65.2	28.3	3.7	2.7
	C	61.7	27.3	7.0	3.9
	Hd	61.5	22.0	2.8	13.8
	Total	63.2	26.4	4.5	5.9
6. Mother made encouraging comments	Hm	48.9	42.1	6.3	2.6
	C	46.5	43.4	6.2	3.9
	Hd	44.5	39.1	3.6	12.7
	Total	47.1	41.7	5.6	5.6
7. Examples of artwork displayed in home	Hm	77.4	19.5	3.2	0
	C	89.8	9.4	0	.8
	Hd	*	*	*	*
	Total	83.5	13.7	1.5	1.3
8. Mother expressed interest in child's performance	Hm	46.8	45.8	7.4	0
	C	54.3	38.0	6.2	1.6
	Hd	56.8	33.3	7.2	2.7
	Total	51.6	40.2	7.0	1.2
9. Mother threatened child with later punishment	Hm	76.8	19.5	3.7	0
	C	82.9	15.5	.8	.8
	Hd	82.9	14.4	1.8	.9
	Total	80.2	17.0	2.3	.5
10. Mother talked proudly about child	Hm	45.8	43.7	10.5	0
	C	57.4	34.1	7.0	1.6
	Hd	56.2	41.1	1.8	.9
	Total	52.0	40.1	7.2	.7

*Head Start eliminated from this item.

Table IV-86

MOTHER BEHAVIOR OBSERVATION SCALE ITEM INTERCORRELATIONS

(Item Ns range from 422 to 423)

	Supportive						Punitive			
Item[1]	1	3	6	8	10	Sub-total	2	4	5	9
Supportive										
3	09									
6	48	08								
8	39	09	36							
10	52	07	36	44						
Subtotal	65	25	56	57	61					
Punitive										
2	10	08	20	19	01	22				
4	21	02	61	25	09	36	42			
5	24	01	61	28	12	41	33	70		
9	03	10	09	09	02	20	59	29	24	
Subtotal	25	11	53	31	11	06	59	69	63	53

[1] See key to items.

Table IV-87

MOTHER BEHAVIOR OBSERVATION SCALE ROTATED FACTOR LOADINGS[1]

(Item Ns range from 422 to 423)

Item[2]	FI	FII	h
1	79	-02	63
2	00	-77	60
3	15	-05	02
4	32	-76	70
5	38	-69	63
6	69	-43	67
8	68	-13	48
9	-09	-70	50
10	78	13	63
PCT. V	27.6	26.7	

Two factors accounted for 54.4% of the total variance.

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[1] Principal components factor analysis followed by a varimax rotation.

[2] See key to itmes.

Table IV-88

MOTHER BEHAVIOR OBSERVATION SCALE
ITEMS LOADING HIGHEST ON EACH FACTOR

(Item Ns range from 422 to 423)

		Loading
FACTOR I	(27.6%) Supportive	
1.	Mother praised child during visits	.80
10.	Mother talked proudly about child	.78
6.	Mother encouraged child during visits	.69*
8.	Mother asked about child's progress during visits	.69
5.	Mother coached child during testing	.39*
4.	Mother criticized child during testing	.33*
FACTOR II		
2.	Mother scolded child during visits	-.77
4.	Mother criticized child during testing	-.77*
9.	Mother threatened child during visits	-.71
5.	Mother coached child during testing	-.69*
6.	Mother encouraged child during testing	-.44*

Two factors accounted for 48.8% of the total variance.

* Item also shows substantial loading on another factor.

Table IV-89

MOTHER BEHAVIOR OBSERVATION SCALE
DESCRIPTIVE DATA

	Scale 1 SUPPORTIVE (possible range=5-15)				Scale 2 PUNITIVE (possible range=4-12)			
	N	Mean	SD	SE	N	Mean	SD	SE
HOME START	181	7.9	2.0	.15	180	5.4	1.6	.12
CONTROL	122	7.4	1.9	.17	123	5.3	1.6	.15
HEAD START	94	7.3	1.8	.18	93	5.0	1.4	.15
SEX:								
M	202	7.6	2.0	.14	200	5.4	1.5	.11
F	195	7.6	1.9	.13	196	5.2	1.5	.11
TOTAL:	397	7.6	1.9	.10	396	5.3	1.6	.08

Table IV-90

PARENT INTERVIEW II
RESPONSE DISTRIBUTIONS[1]

	Home Start	Control	Head Start	Total Sample
Total Number of Interviews	192	130	112	434
Location of family's residence	(N= 192)	(129)	(112)	(433)
On a farm or in the country	42.2%	45.0%	26.8%	39.0%
In a small town or in a city	57.8	55.0	73.2	61.0
Sex of Child	(N=192)	(130)	(112)	(434)
Male	47.9	50.8	56.2	50.9
Female	52.1	49.2	43.7	49.1

If in Home Start, was home visitor present during the interview?

(N=163)

Yes	No
60.1%	39.9%

	Home Start	Control	Head Start	Total Sample
1. WAS ____________ IN A HEAD START OR PRESCHOOL PROGRAM BEFORE LAST FALL?	(N=192)	(130)	(112)	(434)
No	93.2%	93.1%	78.6%	89.4%
Yes	6.8	6.9	21.4	10.6
2. HAVE ANY OF __________ OLDER BROTHERS OR SISTERS BEEN IN A HEAD START PROGRAM?	(N=190)	(129)	(108)	(427)
No	77.9	77.5	56.5	72.4
Yes	22.1	22.5	43.5	27.6
3. HAVE ANY OF __________ OLDER BROTHERS OR SISTERS BEEN IN HOME START?	(N=190)	(130)	(108)	(428)
No	95.3	98.5	92.6	95.6
Yes	4.7	1.5	7.4	4.4
4. WHEN WAS __________ BORN?	(N=192)	(130)	(112)	(434)
Mean age in months	54.3	55.2	53.4	54.3
I'D LIKE TO FIND OUT WHAT SHOTS __________ HAS HAD.				
5. HAS HE (SHE) HAD DPT SHOTS?	(N=192)	(128)	(112)	(432)
No	4.7	10.2	.9	5.3
Yes	92.7	85.2	99.1	92.1
Don't know	2.6	2.6	4.7	2.5

(continued)

Table IV-90
(continued)

	Home Start	Control	Head Start	Total Sample
6. HAS HE (SHE) HAD POLIO SHOTS?	(N=192)	(128)	(112)	(432)
No	6.8%	9.4%	.9%	6.0%
Yes	90.1	87.5	99.1	91.7
Don't know	3.1	3.1	0	2.3
7. HAS HE (SHE) HAD MEASLES SHOTS?	(N=192)	(128)	(112)	(432)
No	10.9	19.5	1.8	11.1
Yes	86.5	77.3	98.2	86.8
Don't know	2.6	3.1	0	2.1
8. WHEN WAS THE LAST TIME __________ WENT TO A DOCTOR?	(N=183)	(118)	(109)	(410)
Mean time in months	4.2	6.0	3.7	4.6
9. WAS THIS LAST VISIT FOR A CHECK-UP OR FOR SOMETHING WRONG?	(N=191)	(128)	(112)	(431)
Check-up	49.7	22.7	37.5	38.5
Something wrong	50.3	77.3	62.5	61.5
OF THOSE WHO WENT TO A DOCTOR IN THE LAST 12 MONTHS, WAS IT:	(N=163)	(95)	(92)	(350)
Check-up	52.1	22.1	37.0	40.0
Something wrong	47.9	77.9	63.0	60.0
WHAT WAS WRONG?	(N=98)	(99)	(70)	(267)
Measles, mumps, chicken pox	0	0	2.9	.7
Accidental injury	18.4	14.1	11.4	15.0
Infection	50.0	49.5	50.0	49.8
Other	31.6	36.4	35.7	34.5
9A. HOW IS IT BEING PAID FOR?	(N=190)	(125)	(112)	(427)
Personal funds	26.3	56.8	38.4	38.4
Home or Head Start	31.1	0	28.6	21.3
Free Clinic	12.1	6.4	5.4	8.7
Medicaid	10.5	10.4	9.8	10.3
Welfare	11.1	15.2	6.2	11.0
Insurance	4.2	5.6	8.9	5.9
Other	2.6	4.0	0	4.4

(Continued)

Table IV-90
(continued)

	Home Start	Control	Head Start	Total Sample
10. WHEN ARRANGING FOR THIS VISIT TO THE DOCTOR, OR WHEN MAKING IT, DID YOU HAVE HELP FROM ANYONE OUTSIDE YOUR FAMILY?	(N=191)	(128)	(112)	(431)
No	53.4%	91.4%	64.3%	67.5%
Yes	46.6	8.6	35.7	32.5
11. WHO HELPED YOU?	(N=89)	(11)	(40)	(140)
Home visitor	88.8	9.1	0	57.1
Head Start person	0	0	82.5	23.6
Other	11.2	90.9	17.5	19.3
12. IS HE (SHE) FROM HEAD START OR HOME START?	(N=89)	(11)	(40)	(140)
No	11.2	90.9	17.5	19.3
Yes	88.8	9.1	82.5	80.7
HOW DID HE (SHE) HELP YOU?	(N=87)	(11)	(38)	(136)
Made doctor appointment	32.2	18.2	28.9	30.1
Provided transportation	36.8	45.4	36.8	37.5
Both made appointment and provided transportation	27.6	9.1	28.9	26.5
Gave parent name and/or phone number of doctor	3.4	18.2	2.6	4.4
Other	0	9.1	2.6	1.5
13. WHEN WAS THE LAST TIME __________ WENT TO THE DENTIST?	(N=167)	(20)	(96)	(283)
Time in months	3.1	6.9	4.3	3.7
14. WAS THIS LAST VISIT FOR A CHECK-UP OR FOR SOMETHING WRONG?	(N=171)	(24)	(103)	(298)
Check-up	68.4	62.5	70.9	68.8
Something wrong	31.6	37.5	29.1	31.2
WHAT WAS WRONG?	(N=53)	(9)	(30)	(92)
Toothache or cavity	83.0	44.4	80.0	78.3
Gum disease	0	0	3.3	1.1
Accidental injury to teeth	3.8	0	0	2.2
Other	13.2	55.6	16.7	18.5

(Continued

Table IV-90
(continued)

		Home Start	Control	Head Start	Total Sample
	OF THOSE WHO WENT TO A DENTIST IN THE LAST 12 MONTHS, WAS IT:	(N=154)	(15)	(92)	(261)
	Checkup	68.8	60.0	69.6	68.6
	Something wrong	31.2	40.0	30.4	31.4
14A.	HOW IS IT BEING PAID FOR?	(N=170)	(24)	(103)	(297)
	Personal funds	2.4%	45.8%	2.9%	6.1%
	Home Start	80.6	4.2	86.4	76.4
	Free clinic	1.2	12.5	0	1.7
	Medicaid	4.7	16.7	5.8	6.1
	Welfare	5.9	8.3	2.9	5.1
	Insurance	2.4	4.2	1.0	2.0
	Other	.6	4.2	0	2.6
15.	WHEN ARRANGING FOR THIS VISIT, OR WHEN MAKING IT, DID YOU HAVE HELP FROM ANYONE OUTSIDE YOUR FAMILY?	(N=171)	(23)	(101)	(295)
	No	12.3	82.6	7.9	16.3
	Yes	87.7	17.4	92.1	83.7
16.	WHO HELPED YOU?	(N=150)	(4)	(93)	(247)
	Home visitor	98.7	25.0	0	60.3
	Head Start person	0	0	96.8	36.4
	Other	1.3	75.0	3.2	3.2
17.	IS HE (SHE) FROM HEAD START OR HOME START?	(N=150)	(4)	(93)	(247)
	No	1.3	75.0	3.2	3.2
	Yes	98.7	25.0	96.8	96.8
	HOW DID HE (SHE) HELP YOU?	(N=150)	(127)	(92)	(245)
	Made appointment	36.0	0	17.4	28.6
	Provided transportation	31.3	33.3	54.3	40.0
	Both made appointment and provided transportation	32.7	33.3	28.3	31.0
	Gave parents name and/or phone number of doctor	0	33.3	0	.4

(Continued)

Table IV-90
(continued)

18. WE'D LIKE TO FIND OUT THE MOST SERIOUS ACCIDENTS __________ HAS HAD SINCE LAST SEPTEMBER. I'LL READ SOME KINDS OF ACCIDENTS AND YOU TELL ME IF ANY HAVE HAPPENED TO __________.

	HOME START						CONTROL					
	(N=192)			If yes, what did you do? (%)			(N=130)			If yes, what did you do? (%)		
Accident	No (%)	Yes (%)	N who said Yes	Treated at Home	Doctor Clinic Hospital	Over-night in Hospital	No (%)	Yes (%)	N who said Yes	Treated at Home	Doctor Clinic Hospital	Over-night in Hospital
Falls	82.3	17.7	34	67.6	32.4	0	84.6	15.4	20	55.0	45.0	0
Blows/Was hit	94.3	5.7	11	45.5	54.5	0	92.3	7.7	10	90.0	10.0	0
Cuts	87.0	13.0	25	32.0	64.0	4.0	88.5	11.5	15	66.7	33.3	0
Animal Bites	96.9	3.1	6	83.3	16.7	0	96.9	3.1	4	75.0	25.0	0
Near Suffocation	99.0	1.0	2	0	50.0	50.0	99.2	.8	1	100.0	0	0
Poisoning	97.9	2.1	4	25.0	75.0	0	98.5	1.5	2	50.0	0	50.0
Near Drowning	99.5	.5	1	100.0	0	0	99.2	.8	1	100.0	0	0
Burns	95.3	4.7	9	77.8	22.2	0	96.2	3.8	5	100.0	0	0
Electric Shock	98.4	1.6	3	100.0	0	0	96.9	3.1	4	100.0	0	0
Automobile	97.9	2.1	4	75.0	25.0	0	98.5	1.5	2	0	100.0	0
Other	99.0	1.0	2	50.0	50.0	0	99.2	.8	1	0	100.0	0

(Continued)

Table IV-90
(continued)

18. WE'D LIKE TO FIND OUT THE MOST SERIOUS ACCIDENTS __________ HAS HAD SINCE LAST SEPTEMBER. I'LL READ SOME KINDS OF ACCIDENTS AND YOU TELL ME IF ANY HAVE HAPPENED TO __________.

	HEAD START						TOTAL SAMPLE					
	(N=112)			If yes, what did you do? (%)			(N=434)			If yes, what did you do? (%)		
Accident	No (%)	Yes (%)	N who said Yes	Treated at Home	Doctor Clinic Hospital	Over-night in Hospital	No (%)	Yes (%)	N who said Yes	Treated at Home	Doctor Clinic Hospital	Over-night in Hospital
Falls	88.4	11.6	13	23.1	69.2	7.7	84.6	15.4	67	55.2	43.3	1.5
Blows/Was hit	93.7	6.3	7	85.7	14.3	0	93.5	6.5	28	71.4	28.6	0
Cuts	89.3	10.7	12	58.3	41.7	0	88.0	12.0	52	48.1	50.0	1.9
Animal Bites	97.3	2.7	3	33.3	66.7	0	97.0	3.0	13	69.2	30.8	0
Near Suffocation	99.1	.9	1	0	100.0	0	99.1	.9	4	25.0	50.0	25.0
Poisoning	99.1	.9	1	0	100.0	0	98.4	1.6	7	28.6	57.1	14.3
Near Drowning	99.1	.9	1	100.0	0	0	99.3	.7	3	100.0	0	0
Burns	96.4	3.6	4	75.0	25.0	0	95.9	4.1	18	83.3	16.7	0
Electric Shock	99.1	.9	1	100.0	0	0	98.2	1.8	8	100.0	0	0
Automobile	96.4	3.6	4	50.0	25.0	25.0	97.7	2.3	10	50.0	40.0	10.0
Other	94.6	5.4	6	0	100.0	0	97.9	2.1	9	11.1	88.9	0

(Continued)

Table IV-90
(continued)

		Home Start	Control	Head Start	Total Sample
19.	HOW MANY BROTHERS AND SISTERS DOES __________ HAVE AT HOME? (See text, p. 83)	(N=192)	(130)	(112)	(434)
	Mean number of siblings	2.5	2.5	2.2	2.4
20.	I'D LIKE TO KNOW THEIR AGES. PLEASE START WITH YOUR YOUNGEST CHILD AND TELL ME HOW OLD EACH BROTHER OR SISTER IS. (See text, p. 83)	(N=192)	(130)	(112)	(434)
	Mean number of sisters	1.25	1.25	1.03	1.19
	Mean number of brothers	1.24	1.22	1.22	1.23
	Mean number of siblings 0-2 yr.	.47	.53	.34	.45
	Mean number of siblings 3-5 yr.	.31	.32	.26	.30
	Mean number of siblings 6-12 yr.	1.16	1.18	1.17	1.17
	Mean number of siblings 13 and older	.58	.45	.48	.51
21.	ARE YOU __________'S:	(N=192)	(130)	(112)	(434)
	MOTHER?	93.7	94.6	95.5	94.5
	FATHER?	1.0	.8	3.6	1.6
	OLDER SISTER (OR BROTHER)?	1.0	0	0	.5
	GRANDMOTHER, AUNT OR OTHER RELATIVE?	4.2	3.8	.9	3.2
	BABYSITTER, NEIGHBOR, OR FRIEND?	0	.8	0	.2
22.	WHEN WERE YOU BORN?	(N=180)	(123)	(106)	(409)
	Mean age of mothers (years)	30.0	29.4	30.4	29.9
23.	DO YOU HAVE A PAYING JOB?	(N=192)	(129)	(112)	(433)
	No	79.2	79.1	31.2	66.7
	Yes	20.8	20.9	68.7	33.3
24.	IF YES, IS IT FULL TIME, REGULAR PART TIME, OR OCCASIONAL PART TIME?	(N=40)	(27)	(77)	(144)
	Full time	70.0	66.7	74.0	71.5
	Regular part time	20.0	18.5	16.9	18.1
	Occasional part time	10.0	14.8	9.1	10.4
25.	WHAT KIND OF WORK DO YOU DO? See Chapter III, p. 36 for information on occupations.				

(Continued)

Table IV-90
(continued)

	Home Start	Control	Head Start	Total Sample
26. WHAT IS THE HIGHEST GRADE YOU COMPLETED IN SCHOOL?	(N=191)	(127)	(112)	(430)
Grade: 1-4	2.6	1.6	1.8	2.1
5-7	9.9	11.8	6.2	9.5
8	18.8	13.4	8.0	14.4
9	11.0	11.8	7.1	10.2
10	12.0	15.0	13.4	13.3
11	18.3	10.2	9.8	13.7
12	24.6	33.9	33.9	29.8
13	1.0	1.6	8.9	3.3
14-16	1.6	.8	10.7	3.7
27. DOES ANYONE ELSE IN YOUR FAMILY EARN AN INCOME THAT IS USED TO SUPPORT THE FAMILY?	(N=192)	(129)	(112)	(433)
No	48.4	41.1	58.9	49.0
Yes	51.6	58.9	41.1	51.0
28. WHO ELSE EARNS AN INCOME THAT IS USED TO SUPPORT THE FAMILY?	(N=99)	(76)	(46)	(221)
Mother	1.0	1.3	2.2	1.4
Father	94.9	94.7	89.1	93.7
Older sibling	0	0	2.2	.5
Other relative	4.0	2.6	4.3	3.6
Babysitter, neighbor, friend	0	0	2.2	.5
Wife and husband	0	1.3	0	.5
WHO CONTRIBUTES THE MOST?	(N=21)	(17)	(22)	(60)
Mother	9.5	0	9.1	6.7
Father	76.2	94.1	81.8	83.3
Older sibling	0	0	4.5	1.7
Other relative	14.3	5.9	4.5	8.3
29. IS HIS (HER) JOB FULL TIME, REGULAR PART TIME, OR OCCASIONAL PART TIME?	(N=97)	(74)	(44)	(215)
Full time	82.5	86.5	93.2	86.0
Regular part time	12.4	9.5	4.5	9.8
Occasional part time	5.2	4.1	2.3	4.2

30. WHAT KIND OF WORK DOES HE (SHE) DO? See Chapter III, p. 36 for information on occupations.

(Continued)

Table IV-90
(continued)

		Home Start	Control	Head Start	Total Sample
31. WHAT IS THE HIGHEST GRADE HE (SHE) HAS COMPLETED IN SCHOOL?		(N=94)	(73)	(44)	(211)
Grade:	1-4	8.5	6.8	2.3	6.6
	5-7	19.1	11.0	6.8	13.7
	8	13.8	27.4	9.1	17.5
	9	19.1	8.2	9.1	13.3
	10	10.6	13.7	9.1	11.4
	11	4.3	4.1	13.6	6.2
	12	19.1	23.3	31.8	23.2
	13	1.1	5.5	0	2.4
	14-16	4.3	0	18.2	5.7
32. DO YOU OWN YOUR HOME OR ARE YOU RENTING?		(N=192)	(129)	(112)	(433)
Own		34.4	31.0	34.8	33.5
Rent		57.3	62.0	57.1	58.7
Live in home of relative		7.3	4.7	5.4	6.0
Other		1.0	2.3	2.7	1.8
33. NOW I AM GOING TO READ A LIST OF COMMUNITY GROUPS AND ORGANIZATIONS. TELL ME IF YOU OR ANYONE ELSE IN YOUR FAMILY IS ACTIVE IN ANY OF THEM.		(N=180-192)	(125-129)	(108-112)	(413-433)
PARENT-TEACHERS ASSOCIATION?	Yes	18.2	8.5	31.2	18.7
BOY SCOUTS, GIRL SCOUTS, 4-H CLUB, OR OTHER YOUTH GROUPS?	Yes	16.2	8.5	16.1	13.9
CHURCH ORGANIZATIONS OR SOCIAL CLUBS?	Yes	34.4	30.2	48.2	36.7
ANY POLITICAL ORGANIZATION?	Yes	3.1	1.6	4.5	3.0
OTHER?	Yes	10.6	6.4	18.5	11.4
Number of groups checked:		(N=192)	(130)	(112)	(434)
	0	47.9	60.8	33.0	47.9
	1	32.8	26.9	33.9	31.3
	2	11.5	10.0	19.6	13.1
	3	5.7	1.5	8.9	5.3
	4	1.6	.8	4.5	2.1
	5	.5	0	0	.2

(Continued)

Table IV-90
(continued)

	Home Start	Control	Head Start	Tota Samp
34. ARE YOU TAKING ANY COURSES OR GOING TO SCHOOL?	(N=192)	(129)	(112)	(433
No	93.2	97.7	96.4	95.4
Yes	6.8	2.3	3.6	4.6
35. IF YES, AT WHAT LEVEL OF EDUCATION?	(N=13)	(3)	(4)	(20)
Adult education	53.8	100.0	50.0	60.0
High school	23.1	0	0	15.0
College courses	23.1	0	50.0	25.0
36. NOW I'M GOING TO READ A LIST OF PLACES AND SERVICES THAT YOU MIGHT HAVE HEARD OF. FOR EACH ONE, PLEASE TELL ME IF YOU HAVE EVER USED IT AND IF YOU ARE USING IT NOW. ALSO, I'D LIKE TO KNOW IF ANYONE IN HEAD START OR HOME START HELPED YOU USE IT.	(N=190-192)	(124-128)	(111-112)	(427-432
LOCAL HOSPITAL				
Heard of it	95.8	92.9	96.4	95.1
Ever used it	85.3	80.2	84.8	83.7
Now using it	60.2	47.6	58.0	55.9
Assistance from Home Start or Head Start	6.8	.8	1.8	3.7
FOOD STAMPS				
Heard of it	99.0	100.0	99.1	99.3
Ever used it	64.9	62.7	72.3	66.2
Now using it	42.4	38.1	35.7	39.4
Assistance from Home Start or Head Start	9.4	4.0	3.6	6.3
MEDICAID				
Heard of it	85.9	86.5	93.7	88.1
Ever used it	32.5	27.0	35.1	31.5
Now using it	26.2	21.4	26.1	24.8
Assistance from Home Start or Head Start	3.1	0	2.7	2.1
FOOD COMMODITIES				
Heard of it	87.9	90.5	94.6	90.4
Ever used it	38.9	35.7	21.4	33.4
Now using it	4.2	4.8	1.8	3.7
Assistance from Home Start or Head Start	1.1	2.4	1.8	1.6

(Continued)

Table IV-90
(continued)

36. (Continued)	Home Start (N=190-192)	Control (124-128)	Head Start (111-112)	Total Sample (427-432)
PUBLIC HEALTH CLINIC				
Heard of it	95.8	96.8	100.0	97.2
Ever used it	78.4	80.8	83.9	80.6
Now using it	61.6	60.8	60.7	61.1
Assistance from Home Start or Head Start	29.5	6.4	23.2	21.1
MENTAL HEALTH CLINIC				
Heard of it	77.0	77.3	83.0	78.7
Ever used it	10.5	6.3	8.9	8.8
Now using it	6.8	3.9	2.7	4.9
Assistance from Home Start or Head Start	3.1	.8	.9	1.9
FAMILY COUNSELING AGENCIES				
Heard of it	70.7	65.6	70.5	69.1
Ever used it	5.8	8.6	4.5	6.3
Now using it	1.6	1.6	1.8	1.6
Assistance from Home Start or Head Start	1.0	0	1.8	.9
PLANNED PARENTHOOD				
Heard of it	92.1	89.5	92.9	91.6
Ever used it	41.4	39.5	41.1	40.7
Now using it	23.6	16.9	21.4	21.1
Assistance from Home Start or Head Start	7.9	2.4	3.6	5.2
[illegible]FARE DEPARTMENT				
Heard of it	99.5	99.2	100.0	99.5
Ever used it	64.6	52.0	53.2	57.9
Now using it	40.1	33.1	29.7	35.3
Assistance from Home Start or Head Start	4.2	4.7	4.5	4.4
DAY CARE OR CHILD CARE PROGRAM				
Heard of it	92.7	91.3	94.6	92.8
Ever used it	9.9	12.6	71.2	26.6
Now using it	4.2	2.4	63.1	18.9
Assistance from Home Start or Head Start	1.6	2.4	51.4	14.7
RECREATIONAL PROGRAMS				
Heard of it	74.0	64.8	75.0	71.5
Ever used it	18.2	9.4	23.2	16.9
Now using it	10.4	5.5	15.2	10.2
Assistance from Home Start or Head Start	6.8	0	6.2	4.6

(Continued)

Table IV-90
(continued)

	Home Start	Control	Head Start	Total Sample
36. (Continued)	(N=190-192)	(124-128)	(111-112)	(427-432)
LEGAL AID				
Heard of it	78.0	71.4	82.0	77.1
Ever used it	19.4	17.5	19.8	18.9
Now using it	4.7	.8	.9	2.6
Assistance from Home Start or Head Start	1.0	0	.9	.7
HOUSING AUTHORITY				
Heard of it	80.7	78.9	91.1	82.9
Ever used it	25.5	21.9	32.1	26.2
Now using it	20.3	13.3	19.6	18.1
Assistance from Home Start or Head Start	2.1	.8	2.7	1.9
STATE EMPLOYMENT OFFICE				
Heard of it	96.8	97.6	98.2	97.4
Ever used it	52.1	50.0	66.1	55.1
Now using it	6.8	3.2	9.8	6.5
Assistance from Home Start or Head Start	1.6	.8	2.7	1.6
JOB TRAINING PROGRAMS				
Heard of it	91.6	88.2	97.3	92.1
Ever used it	16.8	7.1	32.1	17.9
Now using it	4.7	.8	5.4	3.7
Assistance from Home Start or Head Start	2.6	.8	4.5	2.6
37. NOW I WOULD LIKE TO FIND OUT WHAT YOU THOUGHT ABOUT THE THINGS I DID WITH __________. TELL ME WHICH ONES YOU LIKED AND WHICH ONES YOU DIDN'T LIKE.				
DDST	(N=181)	(123)	(72)	(376
Liked	98.9	96.7	98.6	98.1
Didn't like[2]	1.1	3.3	1.4	1.9
PSI	(N=181)	(121)	(71)	(373
Liked	98.9	97.5	97.2	98.1
Didn't like	1.1	2.5	2.8	1.9

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[2] Reasons for not liking an item are shown in Table .

(Continued)

Table IV-90
(continued)

	Home Start	Control	Head Start	Total Sample
37. (Continued)				
HEIGHT & WEIGHT	(N=180)	(120)	(71)	(371)
Liked	99.4	100.0	98.6	99.5
Didn't like	.6	0	1.4	.5
8-BLOCK	(N=183)	(127)	(98)	(408)
Liked	95.1	96.1	92.9	94.9
Didn't like	4.9	3.9	7.1	5.1
38. NOW I'D LIKE TO FIND OUT HOW YOU FEEL ABOUT THE THINGS I ASKED YOU DURING THIS VISIT AND THE LAST ONE. TELL ME WHICH THINGS YOU LIKED AND WHICH ONES YOU DIDN'T LIKE.				
SCHAEFER	(N=182)	(126)	(109)	(417)
Liked	99.5	99.2	99.1	99.3
Didn't like	.5	.8	.9	.7
FOOD INTAKE	(N=183)	(128)	(109)	(420)
Liked	98.9	96.1	97.2	97.6
Didn't like	1.1	3.9	2.8	2.4
HOME ENVIRONMENT SCALE	(N=183)	(127)	(109)	(419)
Liked	98.9	99.2	99.1	99.0
Didn't like	1.1	.8	.9	1.0
PARENT INTERVIEW	(N=185)	(127)	(109)	(421)
Liked	97.3	96.1	98.2	97.1
Didn't like	2.7	3.9	1.8	2.9

Table IV-91

PARENT INTERVIEW I
REACTIONS TO PROGRAM AND INVOLVEMENT IN ACTIVITIES
RESPONSE DISTRIBUTIONS[1]

	Home Start	Head Start	Total Sample
9. WHEN DID ____________ FIRST ENTER THE HEAD START OR THE HOME START PROGRAM?	(N=190)	(N=108)	(N=298)
Months	8.81	8.44	8.68
10. WHAT ARE SOME OF THE THINGS THAT ____________ ESPECIALLY LIKES ABOUT HEAD START OR HOME START?	(N=190)	(N=111)	(N=302)
Nonspecific, positive comment	6.8%	17.1%	10.6%
Educational activities or educational play	40.3	10.8	29.5
Socializing or social activities	29.8	62.1	41.7
Field trips	10.4	7.2	9.2
The home visitor or teacher	11.6	0.0	7.2
Other (nonspecific negative comments)	1.0	2.7	1.7
11. WHAT ARE SOME OF THE THINGS THAT ____________ DOESN'T LIKE ABOUT HEAD START OR HOME START?	(N=191)	(N=111)	(N=302)
Nonspecific negative comment	14.6%	20.7%	17%
Educational activities or educational play	3.7	.9	2.6
Socializing or social activities	3.6	2.7	3.3
Nutritional and medical activities	4.7	0.0	3.0
Parent gave positive comment	72.8	52.3	65.2
Naps	0.0	23.4	8.6
12. WHAT OTHER THINGS DO YOU THINK THE PROGRAM SHOULD DO FOR ____________.	(N=190)	(N=111)	(N=301)
Nonspecific positive (do well, learn different things)	68.4%	80.2%	72.8%
School readiness (academic) e.g., get him ready for first grade	5.8	5.4	5.6
Gains outside experience (as from field trips)	3.2	1.8	2.7
Social adjustment (learn how to act around other people)	1.6	5.4	3.0
Other	21.0	7.2	15.9

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[1] Questions 1-8 on Parent Interview I were combined into a Mother Sense of Control Inventory for the purposes of psychometric analysis. The findings for these items are reported in the Parent Measures section of this report. Question 22, Urban/Rural is analyzed in Parent Interview II so, it was omitted here.

Table IV-91
(continued)

	Home Start	Head Start	Total Sample
13. WHAT ARE SOME OF THE THINGS YOU ARE GETTING OUT OF THE PROGRAM?	(N=189)	(N=110)	(N=299)
Nonspecific positive comment (all of them, learning).	31.7%	40.0%	34.8%
Educational activities	1.6	0.0	1.0
Socializing with Home Visitor (gives me someone to talk to)	2.1	0.0	1.3
Field trips and picnics	1.6	1.8	1.7
Center activities (group meetings, workshops, etc.)	21.2	10.0	17.1
Nutrition help or referral	2.1	.9	1.7
Health or medical help or referrals	3.2	.9	2.3
Has improved parent approach to child	21.2	7.3	16.1
Allows mother to work or rest	1.6	32.7	13.0
Other	10.0	2.7	7.3
Negative comment	3.7	3.6	3.7
14. WHAT ARE SOME OF THE OTHER THINGS YOU THINK THE PROGRAM SHOULD DO FOR YOU?	(N=188)	(N=111)	(N=299)
Nonspecific positive comment	70.2%	83.8%	75.3%
Educational	3.2	0.0	2.0
Personal-social gains, self-image	1.1	0.0	.7
Using community resources	.5	0.0	.3
Benefit to child	1.1	.9	1.0
Nutritional	.5	0.0	.3
Improved parent teaching skills	.5	0.0	.3
Other	22.8	15.3	20.0
15. HAVE YOU HEARD OF A GROUP CALLED THE PARENT POLICY COUNCIL OR COMMITTEE? IT MAY ALSO BE CALLED A PARENT POLICY BOARD, PARENT ADVISORY COMMITTEE, PAC OR PC.	(N=191)	(N=111)	(N=302)
No	45.0%	29.7%	39.4%
Yes	55.0	70.3	60.6
16. IF YES, HAVE YOU EVER BEEN TO ONE OF THEIR MEETINGS?	(N=106)	(N=78)	(N=184)
No	39.7%	50.9%	46.2%
Yes	60.3	49.1	53.8
17. IF YES, WHAT KINDS OF THINGS ARE DISCUSSED AT THE MEETINGS?	(N=45)	(N=44)	(N=89)
Nonspecific comments	4.4%	0.0%	2.2%
Educational activities	2.2	0.0	1.1
Policies of program, electing officers	51.2	65.9	58.5
Health	2.2	0.0	1.1
Child rearing	0.0	2.3	1.1
Planning group activities	29.0	31.8	30.4
Use of community resources	8.9	0.0	4.5
Other	2.2	0.0	1.1

Table IV- 91
(continued)

	Home Start	Head Start	Total Sample
18. ARE THERE THINGS YOU THINK SHOULD BE BROUGHT UP AT THESE MEETINGS THAT HAVE NOT BEEN DISCUSSED?	(N=52)	(N=44)	(N=96)
No	86.5%	93.2%	89.6%
Yes	13.5	6.8	10.4
19. IF YES, WHAT?	(N= 7)	(N= 3)	(N=10)
Nonspecific comment	14.3%	0.0%	10.0%
Staff problem	28.6	33.3	30.0
Other	57.1	66.7	70
20. HAVE THERE BEEN GET-TOGETHERS FOR EITHER HEAD START OR HOME START FAMILIES, SUCH AS SOCIAL HOURS, PICNICS, OR OTHER GATHERINGS?	(N=191)	(N=110)	(N=301)
No	8.9%	22.7%	14%
Yes	91.1	77.3	86
21. IF YES, DID YOU ATTEND?	(N=173)	(N=85)	(N=258)
No	20.8%	27.1%	22.9%
Yes	79.2	72.9	77.1

The following questions were only administered to parents of children enrolled in the Head Start program.

23. How much time have you spent in the last two weeks visiting or working in the Head Start center?

	N	Percent
No	81	72%
Yes	31	28%
	112	

Mean Number of Hours = 21.3

24. Has any Head Start staff member spent any time in your home during the last month?

	N	Percent
No	83	75%
Yes	28	25%
	111	

25. How much time did he (she) spend in your home during the last month?

Mean Number of Hours = 1.5

Table IV-91
(continued)

26. How much time does ______________ spend in the Head Start center each day?
(Child's Name)

Mean Number of Hours = 7.6

27. How many days a week does ______________ spend in the center?
(Child's Name)

Mean Number of Days = 5

Table IV-92

MOTHER'S SENSE OF CONTROL INVENTORY ITEMS

1. SUPPOSE YOU DIDN'T LIKE WHAT A TEACHER WAS DOING WITH ONE OF YOUR CHILDREN WHO IS IN SCHOOL, WHAT WOULD YOU DO?

2. WHAT WOULD YOU DO IF ______(child's name)______ SEEMED TO HAVE TROUBLE HEARING THINGS?

3. IF ______(child's name)______ HAD A BAD FALL AND YOU THOUGHT HIS (HER) LEG WAS BROKEN, WHAT WOULD YOU DO?

4. SUPPOSE THE ROAD (OR STREET) IN FRONT OF YOUR HOUSE BECAME ALMOST IMPOSSIBLE TO DRIVE ON BECAUSE IT WAS NEVER REPAIRED. WHAT WOULD YOU DO?

5. WHAT WOULD YOU DO IF THE POLICE CAME AND ASKED TO SEARCH YOUR HOUSE WITHOUT GIVING YOU ANY REASON?

6. IF YOUR ROOF WAS LEAKING AND YOUR LANDLORD WOULDN'T GET IT FIXED, WHAT WOULD YOU DO? (If parent owns the house or is living with relatives, ask her to suppose that she had to deal with a landlord.)

7. IF ONE OF YOUR CHILDREN WOKE UP IN THE MIDDLE OF THE NIGHT WITH A REALLY HIGH FEVER, WHAT WOULD YOU DO?

8. IF YOU WERE WORRIED THAT ______(child's name)______ WAS EATING LESS THAN USUAL WHAT WOULD YOU DO?

Table IV-93

MOTHER'S SENSE OF CONTROL INVENTORY PERCENT RESPONSES IN EACH SCORING CATEGORY

Item[1]	Rating 1	2	3
Teacher Problem	3.9	.5	95.6
Hearing	0.0	.7	99.3
Bad Fall	0.0	.5	99.5
Street	19.4	0.0	80.6
Police	15.5	.3	84.3
Roof Leak	5.6	0.0	94.4
Fever	.2	.2	99.5
Eat Less	9.8	0.0	90.2

[1] See key to items.

Table IV-94

MOTHER SENSE OF CONTROL INVENTORY INTERITEM AND ITEM-TOTAL CORRELATIONS

Item[1]	Teacher Problem	Hearing	Bad Fall	Street	Police	Roof Leak	Fever	Eat Less
Hearing	-02							
Bad Fall	-02	00						
Street	07	-04	-03					
Police	03	-03	07	01				
Roof Leak	-02	-02	-02	01	-05			
Fever	-01	-01	00	-03	03	-02		
Eat Less	06	-02	02	16	02	04	05	
Total	11	05	02	16	-01	-05	-02	10

[1] See key to items.

Table IV-95

RELIABILITY OF CODING 8-BLOCK AUDIO TAPES (INDIVIDUAL CATEGORIES)

8-Block Categories	Number of Events Coded					Pairwise Reliabilities (Cartwright's Alpha)		
	Coder 1	Coder 2	Coder 3	Coder 4	Coder 5	Mean	Minimum	Maximum
MOTHER CATEGORIES								
quest Talking								
1. Height	35	37	34	34	29	.65	.52	.82
2. Mark	26	31	35	29	29	.46*	.28	.71
3. Height & Mark	7	7	7	12	12	.45*	.27	.75
4. Unclassified	212	208	231	199	216	.66	.58	.73
quest Understanding								
5. Height	85	65	75	72	65	.59	.51	.71
6. Mark	112	126	126	123	122	.62	.46	.73
7. Height & Mark	49	49	51	55	52	.66	.60	.72
8. Unclassified	273	266	224	261	250	.52	.48	.56
quest Placement								
9. Height	25	28	28	26	24	.47*	.23	.80
10. Mark	30	32	30	34	28	.47*	.32	.64
11. Height & Mark	72	71	75	76	74	.62	.45	.84
12. Unclassified	275	262	274	271	262	.64	.56	.72
lk About								
13. Height	51	56	57	57	63	.54	.44	.59
14. Mark	39	43	33	48	37	.47*	.40	.59
15. Height & Mark	49	62	51	48	57	.57	.47	.71
16. Unclassified	124	108	106	109	129	.37*	.26	.46
. Direct Request	89	90	98	71	80	.45*	.36	.52
. Comments	27	11	17	16	8	.23*	.14	.46
. Task Irrelevancy	22	25	22	23	27	.57	.20	.92
. Praise/Acknowledge	85	70	74	62	54	.43*	.30	.55
. Encourage	44	35	42	36	47	.51	.41	.69
. Threaten, Demean, Bribe	3	5	6	7	7	.25*	.09	.50
. Correction/Alone	74	74	80	62	77	.47*	.41	.62
. Correction/Reason	27	31	28	31	24	.46*	.29	.60
. Correction/Question	14	12	27	19	18	.33*	.20	.53
CHILD CATEGORIES								
lk About								
. Height	106	102	107	102	108	.63	.51	.71
. Mark	155	154	148	147	122	.62	.51	.80
. Height & Mark	16	17	18	21	18	.50	.28	.77
. Unclassified	269	208	237	198	209	.48*	.40	.54
. Direct Request	2	0	11	3	4	.03*	0	.17
. Comments	17	10	18	15	20	.18*	.03	.30
. Task Irrelevancy	22	27	27	26	46	.45*	.12	.83
. Acknowledge	5	6	4	2	0	.06*	0	.29
. I Don't Know	7	5	5	8	10	.40*	.31	.67
. Refuse, Reject	4	1	8	3	11	.10*	0	.25

eliability considered too low for using this category as an individual item.

Table IV-96

RELIABILITY OF CODING 8-BLOCK AUDIO TAPES
(SCALE SCORES)

Score[1]		Number of Events Coded					Pairwise Reliabilities (Cartwright's Alpha)			
							Spring, 1974			Fall, 1973
		Coder 1	Coder 2	Coder 3	Coder 4	Coder 5	Mean	Minimum	Maximum	Mean
1. Talk About	(13-15)	139	161	141	153	157	.58	.53	.66	.65
2. Feedback	(20,21,23)	203	179	196	160	178	.49	.41	.59	.52
3. Request Talk	(1-3)	68	75	76	75	70	.57	.43	.77	--
4. Child Talk	(26-28)	277	273	273	270	248	.66	.55	.79	.73

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[1] Number in parentheses indicate items belonging to each scale in the Spring, 1974 analysis.

Table IV-97

8-BLOCK TASK
MEANS, SD's AND RESPONSE DISTRIBUTIONS (PERCENTS) ON MOTHER-CHILD INTERACTION VARIABLES

(N = 402)

		Mean[1]	SD	Proportion								
MOTHER CATEGORIES[2]				0- .001	.001- .500	.501- 1.000	1.001- 1.500	1.501- 2.000	2.001- 2.500	2.501- 3.500	3.501- 4.500	4.501- 9.999
Request Talking												
Height	(1)	.19	.38	55.0	35.1	7.7	.7	.7	.2	.2	.2	0
Mark	(2)	.26	.41	43.8	40.0	10.9	3.5	1.0	0	.7	0	0
Height & Mark	(3)	.08	.19	68.2	28.6	2.7	.2	.2	0	0	0	0
Unclassified	(4)	.77	.91	21.9	34.3	14.2	12.7	7.7	2.7	4.5	1.5	.5
Request Understanding												
Height	(5)	.43	.49	21.1	51.2	17.4	6.2	2.5	.7	.7	0	0
Mark	(6)	.62	.62	14.4	40.5	27.9	10.7	3.5	1.5	1.0	.2	.2
Height & Mark	(7)	.39	.54	33.3	40.8	16.4	5.2	2.5	.5	1.0	.2	0
Unclassified	(8)	1.84	1.16	2.2	9.5	19.9	12.4	17.9	11.2	18.4	6.0	2.5
Request Placement												
Height	(9)	.21	.37	50.0	38.3	7.7	3.0	.2	.5	.2	0	0
Mark	(10)	.22	.39	47.3	40.8	8.5	1.5	1.5	.2	0	.2	0
Height & Mark	(11)	.30	.55	50.5	30.8	10.7	4.0	1.5	1.2	1.0	.2	0
Unclassified	(12)	1.53	1.20	3.0	14.2	23.9	18.4	17.7	7.7	10.7	1.7	2.7
Talk About												
Height	(13)	.37	.40	24.9	48.0	21.9	3.5	1.5	0	.2	0	0
Mark	(14)	.40	.42	22.4	47.8	22.4	4.7	2.2	.2	.2	0	0
Height & Mark	(15)	.43	.61	34.1	38.6	16.2	4.7	3.2	1.5	1.5	.2	0
Unclassified	(16)	1.06	.74	3.0	22.9	32.6	18.4	13.9	4.7	3.7	.7	0
Direct Request	(17)	.79	.81	11.4	38.6	23.4	12.2	7.0	2.7	3.5	1.0	.2
Comments	(18)	.11	.27	64.4	31.1	2.5	1.0	.7	0	.2	0	0
Task Irrelevancy	(19)	.13	.52	82.3	10.2	2.7	2.5	.7	.5	.7	0	.2
Praise/Acknowledge	(20)	.56	.63	18.2	42.3	24.1	8.2	4.0	1.0	1.7	.2	.2
Encourage	(21)	.26	.61	45.0	42.3	8.0	2.0	1.7	0	.2	0	.7
Threaten,Demean,Bribe	(22)	.08	.26	76.9	18.4	3.0	1.0	.5	0	.2	0	0
Correction/Alone	(23)	.50	.55	17.7	47.5	24.1	5.7	3.0	1.2	.2	.5	0
Correction/Reason	(24)	.16	.24	46.5	45.3	7.5	.5	.2	0	0	0	0
Correction/Question	(25)	.12	.18	51.0	44.3	4.7	0	0	0	0	0	0
CHILD CATEGORIES												
Talk About												
Height	(26)	.64	.77	27.9	28.9	20.4	10.2	7.2	2.2	2.2	.7	.2
Mark	(27)	.93	1.02	21.6	26.9	14.7	15.7	8.0	4.2	6.5	1.7	.7
Height & Mark	(28)	.15	.38	70.6	19.4	6.5	1.5	1.7	0	.2	0	0
Unclassified	(29)	1.80	1.52	5.7	16.4	17.7	10.9	14.7	7.7	13.9	7.7	5.2
Direct Request	(30)	.03	.11	86.6	12.2	1.0	.2	0	0	0	0	0
Comments	(31)	.11	.31	69.7	23.9	4.5	1.2	0	.5	.2	0	0
Task Irrelevancy	(32)	.09	.25	74.4	20.9	3.2	.7	.5	.2	0	0	0
Acknowledge	(33)	.05	.22	78.9	19.4	1.0	.2	0	.2	.2	0	0
I Don't Know	(34)	.07	.17	72.4	24.4	3.0	.2	0	0	0	0	0
Refuse, Reject	(35)	.09	.31	79.9	15.4	3.0	1.2	0	.2	0	.2	0

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[1] The mean proportion can be interpreted as the mean number of events per minute.

[2] Number in parentheses is the category number referred to in other tables.

Table I -98
8-BLOCK SORT TASK
ROTATED FACTOR LOADINGS[1]
(N=402)

Category[2]	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	h^2
1	69	-02	03	-05	-14	01	08	44	-09	05	-07	70
2	71	03	05	-15	-26	-04	05	13	20	10	-16	67
3	55	06	17	-06	09	-09	-11	-29	21	-22	-12	57
4	73	02	01	-04	10	02	-04	-16	-15	-12	-05	64
5	10	16	56	04	-76	18	-21	01	10	08	18	61
6	-11	01	66	03	-28	-15	25	-06	15	06	02	56
7	-02	-01	33	-30	12	-07	03	08	66	04	35	66
8	65	-06	02	-42	-17	-07	-04	-16	-13	-31	64	63
9	-07	06	05	72	-16	22	-06	11	02	-07	04	66
10	-08	-03	10	67	-07	-17	16	-05	03	15	-15	56
11	04	-09	34	29	06	-10	04	01	66	01	-12	56
12	-16	07	02	-06	-08	-10	02	14	-22	-16	15	54
13	18	-06	67	13	17	20	02	09	-05	-17	18	64
14	13	-02	70	12	21	-09	17	-16	05	12	-07	65
15	-15	-02	35	-21	59	-06	-05	04	35	-06	-07	65
16	-04	21	26	-04	06	-06	15	06	-16	09	62	56
17	-07	58	27	-12	-10	-09	21	13	13	17	10	58
18	-02	69	-08	05	-01	22	-02	07	09	20	05	46
19	-27	17	07	12	-05	83	-03	04	-06	75	-03	74
20	69	-01	-10	20	12	03	00	12	49	-17	55	56
21	-08	77	-07	-06	-06	-18	03	02	-15	-10	06	67
22	01	78	-07	03	03	08	08	-20	-06	08	-01	66
23	02	14	14	-01	04	00	76	-01	05	07	02	63
24	22	03	29	23	05	09	46	-14	27	-19	01	53
25	18	-01	-07	-01	-01	19	45	-09	29	26	05	44
26	85	-12	02	01	04	04	05	18	-06	01	18	81
27	86	-11	05	01	19	-04	-01	-17	06	12	12	76
28	19	-05	-06	-09	72	-05	00	12	11	09	04	61
29	15	-16	01	08	-04	05	33	-31	08	39	40	67
30	-01	18	05	13	10	04	-06	04	-10	76	06	66
31	04	32	-06	-05	-09	38	07	-09	21	51	-11	59
32	02	-03	-03	01	-05	83	04	-06	-09	04	02	71
33	16	01	-07	-07	13	-02	-06	55	14	02	10	38
34	15	11	00	-17	-02	06	-05	-58	06	07	14	43
35	-01	58	-02	-08	09	46	02	-14	04	27	-10	67
PCT.V	10.1	7.3	6.2	4.6	4.3	6.1	5.0	3.8	5.2	4.3	4.6	

Eleven factors accounted for 61.5% of the total variance.

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[1] Principal components analysis followed by varimax rotation.

[2] See Table IV-   for key to categories.

Table IV- 99

8-BLOCK INTERACTION SCORES
FALL-SPRING CORRELATIONS

	Home Start		Control		Head Start		Total Sample	
Variable	N	r	N	r	N	r	N	r
Request Talk	167	.32	115	.24	102	.16	384	.25
Diagnostic	167	.38	115	.27	102	.33	384	.34
Talk About	167	.24	115	.26	102	.55	384	.32
Interactions/Min.	157	.35	102	.42	89	.40	348	.38
Mean Length of String	160	.39	106	.10	91	.16	357	.24
Feedback	166	.42	113	.38	100	.24	379	.37

Table IV-100

FALL-SPRING CHANGE IN MOTHER INTERACTION VARIABLES

	Six-Site Analysis				Four-Site Analysis			
	Home Start		Control		Home Start		Head Start	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Request Talk								
Fall	.51	.84	.64	1.04	.57	.91	.55	.72
Spring	.55	.72	.46	.85	.56	.69	.58	.78
Difference	.05	.91	-.18	1.17	.01	.97	.04	.98
t ratio	-.64		-1.61		.11		.40	
N	167		115		111		102	
Diagnostic								
Fall	.94	1.20	.84	.95	.98	1.27	.85	.97
Spring	.90	.94	.56	.76	.91	.94	.87	1.01
Difference	-.04	1.21	-.27	1.04	.07	1.29	.02	1.15
t ratio	-.42		-2.82*		.60		.16	
N	167		115		111		102	
Talk About								
Fall	1.89	1.86	1.62	1.54	1.72	1.82	1.76	1.37
Spring	1.39	1.10	.94	.79	1.15	.91	1.16	1.05
Difference	-.50	1.92	-.68	1.53	-.57	1.89	-.60	1.19
t ratio	-3.34*		-4.73*		-3.16*		-5.09*	
N	167		115		111		102	
Interactions/min.								
Fall	8.73	6.19	7.94	5.15	8.35	5.78	6.52	4.64
Spring	7.76	4.37	6.18	4.20	7.79	4.37	7.03	4.16
Difference	-.97	6.18	-1.76	5.09	-.56	5.91	.51	4.85
t ratio	-1.97		-3.49*		-.97		1.00	
N	157		102		103		89	
Mean Length of String								
Fall	5.49	8.81	5.73	8.65	4.90	3.96	7.95	9.27
Spring	4.67	4.99	4.97	4.22	4.49	4.96	5.19	7.10
Difference	-.82	8.28	-.76	9.24	-.41	4.74	-2.76	10.72
t ratio	-1.25		-.85		-.88		-2.46*	
N	160		106		105		91	
Feedback								
Fall	1.59	1.68	1.41	1.04	1.50	1.83	1.47	.98
Spring	1.42	1.02	1.20	1.14	1.33	.99	1.36	.96
Difference	-.17	1.56	-.21	1.21	-.17	1.67	-.11	1.19
t ratio	-1.40		-1.82		-1.05		-.95	
N	166		113		110		100	

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*p<.05

Table V-1

KEY TO WHOLE SCORE FACTOR ANALYSIS AND INTERCORRELATIONS

Variable	Whole Score
1	Sex
2	Age in months
3	Occupation
4	Mother's Education
5	Urban/Rural
6	DDST - Fine Motor
7	DDST - Language
8	DDST - Gross Motor
9	DDST - Personal-Social
10	8-Block Child Score
11	PSI
12	SBI - Task Orientation
13	SBI - Extraversion-Introversion
14	SBI - Hostility-Tolerance
15	POCL - Test Orientation
16	POCL - Sociability
17	Food Total
18	Nutrition Total
19	Height
20	Weight
21	HES - Mother Involved
22	HES - Playthings
23	HES - Mother Teaches
24	HES - Household Tasks
25	HES - Books
26	HES - TV
27	MBOS - Supportive
28	MBOS - Punitive
29	8-Block - Talk About
30	8-Block - Feedback
31	8-Block - Child Talk
32	8-Block - Diagnostic
33	8-Block - Request Talk
34	8-Block - Interactions/Minute
35	8-Block - Mean Length of Mother String

Table V-2

WHOLE SCORE INTERCORRELATIONS--HOME START

(Ns range from 163 to 192)

	Score[1]	SEX 1	AGE 2	OC 3	ED 4	UR 5	DDST 6	7	8	9	8B 10	PSI 11	SBI 12	13	14	POCL 15	16	FOOD 17	18	H 19	W 20	HES 21	22	23	24	25	26	MBCS 27	28	8-BLOCK 29	30	31	32	33	34
AGE	2	-04																																	
OCC	3	-07	11																																
ED	4	-01	-08	24																															
U/R	5	10	-26	-11	17																														
DDST	6	12	53	25	08	-23																													
	7	-02	55	21	02	-29	70																												
	8	22	40	07	-02	-10	45	47																											
	9	11	29	15	11	-04	43	39	27																										
8-B	10	12	51	24	04	-29	48	61	36	27																									
PSI	11	06	59	26	-03	-31	72	77	54	22	64																								
SBI	12	-07	18	05	02	-18	25	30	15	29	18	33																							
	13	09	06	01	06	-03	06	08	10	15	-02	-07	20																						
	14	04	-20	-20	-08	00	-30	-44	-20	-10	-32	-32	-30	-10																					
POCL	15	16	34	07	09	-09	46	51	34	30	41	46	29	29	-38																				
	16	-02	26	22	13	08	28	38	17	03	31	29	01	20	-28	59																			
FOOD	17	-11	02	01	02	-11	01	11	04	06	04	04	10	10	-15	21	14																		
NUT	18	-18	04	10	08	-07	03	13	01	07	06	02	14	21	-19	15	15	75																	
HT	19	-10	58	21	00	-16	42	42	39	30	46	51	11	04	-25	27	21	14	13																
WT	20	-07	33	15	-01	-15	23	25	17	12	25	29	01	07	-10	17	29	22	16	70															
HES	21	-24	-01	-02	10	-02	-02	04	05	26	04	-01	31	21	-10	12	11	13	17	04	-04														
	22	05	07	10	22	04	19	29	08	24	23	17	13	12	-22	20	12	10	12	11	10	33													
	23	-01	13	04	00	-03	19	10	23	28	13	20	15	11	-07	09	05	03	-05	29	14	22	34												
	24	02	01	05	16	-06	03	15	04	30	12	08	20	16	-18	14	09	08	12	11	01	41	36	43											
	25	-01	17	02	06	-16	27	33	22	23	25	23	30	17	-14	21	07	02	12	10	03	37	37	24	39										
	26	03	-03	-09	-08	-05	04	-02	-01	02	-14	-03	00	01	03	04	-09	05	04	03	04	-05	-15	-06	-06	-04									
MBOS	27	-02	00	08	05	34	-01	03	03	-07	06	14	19	-06	-13	07	03	00	07	07	18	09	06	-13	-05	13	00								
	23	-15	-19	-06	05	35	-35	-32	-16	-19	-23	-30	-20	-13	24	-46	-05	-13	-12	-16	-08	05	-02	02	-03	-16	-04	06							
8-B	29	02	-26	00	25	20	-16	-25	-11	01	-09	-28	-05	08	-15	-01	00	00	14	-05	-10	11	-03	-05	05	-06	01	16	09						
	30	-10	-19	-09	-04	09	-20	-14	-14	-19	-07	-07	03	-05	04	-10	00	-11	-02	-11	-06	01	-15	-17	-04	-09	02	24	14	06					
	31	-01	20	20	12	03	29	20	16	31	40	29	20	16	-27	31	25	03	15	22	04	18	12	01	10	11	-05	05	-10	11	08				
	32	00	05	02	06	-04	08	14	15	14	02	11	16	19	-07	14	-01	01	07	09	03	11	04	00	06	13	06	07	-11	00	-06	55			
	33	-04	01	05	14	06	02	00	00	01	03	06	08	06	-03	03	00	-01	03	-01	-07	04	-01	01	-05	00	03	00	04	12	08	54	49		
	34	-14	05	22	18	12	08	09	-03	17	17	09	08	09	-21	13	20	-02	10	02	01	19	09	-05	03	04	-05	09	06	10	28	75	39	47	
	35	07	-11	-16	-12	-08	-06	-14	01	-19	-18	-12	-14	-26	20	-26	-45	-06	-15	-15	-08	-18	-04	06	-05	-02	08	-01	00	01	-05	-43	-17	-15	-57

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[1] See key to scores Table V-1.

Table V-3

WHOLE SCORE INTERCORRELATIONS--CONTROL

(Ns range from 102 to 135)

Score[1]		SEX	AGE	OC	ED	UR	DDST				8B	PSI	SBI			POCL		FOOD		H	W	HES						MBOS		8-BLOCK					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
AGE	2	-06																																	
OCC	3	-16	14																																
ED	4	11	-02	20																															
U/R	5	14	-17	-19	00																														
DDST	6	05	43	14	-01	-20																													
	7	-02	33	17	11	-35	66																												
	8	10	45	-08	14	-10	44	25																											
	9	-01	13	04	02	-21	30	27	31																										
8-B	10	-09	40	06	18	-16	36	48	29	15																									
PSI	11	04	27	06	25	-22	58	64	35	25	40																								
SBI	12	09	11	00	06	-10	19	13	06	08	05	20																							
	13	12	00	-11	01	-05	00	-03	-04	05	-01	-15	23																						
	14	-09	07	-13	-23	19	-06	00	-04	-12	02	-08	-34	-12																					
POCL	15	08	17	08	17	-15	31	37	20	22	35	39	18	17	-12																				
	16	00	16	15	20	-18	18	22	17	11	35	19	16	26	-10	65																			
FOOD	17	-18	07	-01	13	-09	00	06	07	04	07	08	02	21	-16	10	10																		
NUT	18	-05	02	-05	14	00	07	14	06	-01	17	10	02	15	-23	09	06	72																	
HT	19	00	53	04	08	-06	29	28	45	22	26	19	03	05	00	18	08	13	10																
WT	20	-09	37	08	10	-05	18	27	29	15	25	24	20	08	-12	13	14	20	18	68															
HES	21	09	-15	08	33	-09	-04	03	-04	13	09	01	24	11	-24	09	14	13	20	-06	-08														
	22	10	02	-03	09	-19	24	32	16	30	20	33	28	10	-14	07	07	09	08	08	11	24													
	23	03	14	01	02	-07	11	10	22	33	05	11	28	00	-04	05	10	03	-07	16	16	23	40												
	24	17	08	-12	09	-05	14	13	18	09	05	13	25	08	-14	04	-04	09	10	19	08	34	35	42											
	25	-08	-13	14	19	-04	11	17	-11	21	06	15	22	11	-23	11	01	18	22	-03	09	45	41	32	40										
	26	-14	-07	-01	-19	02	-08	00	-17	-06	-18	-04	-13	-05	04	-13	-20	-02	-05	-03	09	-23	-05	-25	-12	01									
MBOS	27	02	-03	09	00	-11	19	21	-02	09	17	13	-02	-09	-05	14	06	-02	10	-06	-14	11	00	-25	13	05	01								
	28	04	-09	-05	-12	18	-19	-14	-05	-02	-12	-18	-12	-18	09	-37	-26	-08	-07	00	-03	04	-17	-01	08	-11	01	10							
8-B	29	13	-13	00	26	13	-26	-11	-13	-07	-07	-28	-01	20	-13	13	12	19	17	00	-01	17	-01	-06	02	16	-04	07	08						
	30	04	-16	-01	-06	04	-25	-17	-11	00	-16	-28	-24	-09	05	-18	-05	04	11	-03	-07	13	-12	-04	04	11	03	06	27	07					
	31	00	08	-02	21	01	06	24	00	01	30	05	-07	07	01	22	28	10	12	-05	09	12	10	-01	-04	-04	-24	11	-06	29	-04				
	32	-07	02	00	10	04	07	17	06	06	20	-04	-07	04	02	23	10	09	13	05	01	07	11	00	-05	04	-23	05	-10	20	00	70			
	33	04	-02	-11	15	04	08	19	02	01	18	07	-04	-05	06	13	14	03	09	02	-08	04	07	-05	00	-14	-14	-14	-09	16	-02	79	49		
	34	05	-06	-06	17	05	-06	16	-07	-14	14	-12	-09	14	-08	12	26	10	16	-05	-04	12	03	-12	-03	-04	-16	14	-03	44	11	24	55	65	
	35	05	-19	16	05	01	-08	-19	04	01	-25	06	-02	-10	02	-13	-18	-11	-11	05	11	07	-02	07	04	07	04	-12	06	-19	26	-41	-25	-24	-55

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[1] See key to scores Table V-1.

Table V-4

WHOLE SCORE INTERCORRELATIONS--HEAD START

(Ns range from 93 to 112)

	Score[1]	SEX	AGE	OC	ED	UR	DDST				8B	PSI	SBI			POCL		FOOD		H	W	HES						MBOS		8-BLOCK					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
AGE	2	02																																	
OCC	3	-11	-07																																
ED	4	-31	-14	44																															
U/R	5	-07	-05	07	10																														
DDST	6	17	30	11	07	03																													
	7	-01	35	13	17	-13	54																												
	8	08	41	06	-04	-04	49	49																											
	9	08	22	07	-12	-02	33	14	14																										
8-B	10	-07	22	08	10	-03	27	50	38	11																									
PSI	11	09	45	13	06	-03	54	[illegible]	41	20	41																								
SBI	12	-07	05	08	00	02	[illegible]	[illegible]	14	25	17	32																							
	13	00	01	00	-10	-17	-02	-06	-03	07	-02	01	36																						
	14	08	08	-10	-16	-11	03	02	-03	-04	-02	-06	-17	-01																					
POCL	15	04	27	09	12	02	28	41	41	10	28	29	02	-01	-23																				
	16	-03	22	16	13	03	23	24	21	08	12	24	-04	01	-20	72																			
FOOD	17	-09	21	04	-14	-12	-07	07	10	12	00	11	05	17	10	-05	06																		
NUT	18	-06	-04	07	-04	-02	-05	03	-04	06	-09	01	09	24	-10	-13	-06	61																	
HT	19	-02	59	12	06	04	29	22	28	34	13	21	-01	-17	-01	14	08	23	01																
WT	20	-02	38	05	00	-09	19	14	15	25	-02	13	-05	-13	-08	03	02	27	16	75															
HES	21	07	-11	03	-07	-18	-01	-06	-02	01	01	02	-05	15	16	02	05	25	12	-11	-06														
	22	04	06	22	09	00	02	00	-01	06	07	09	15	02	08	-04	-01	09	07	03	-01	38													
	23	12	08	12	-05	11	10	09	-04	19	-10	19	12	-02	01	12	08	07	00	10	10	24	16												
	24	00	11	10	10	13	14	21	15	13	21	22	10	10	03	16	17	14	19	02	04	42	40	14											
	25	-14	-08	10	31	-10	-01	05	-05	00	-01	11	28	20	-24	03	13	12	20	-09	-04	41	36	06	24										
	26	-08	-03	-03	07	-04	11	14	03	-12	12	02	-13	02	-05	12	07	-06	06	-01	-08	-09	-01	-08	-02	06									
MBOS	27	-01	-03	00	00	01	-13	-03	-16	-03	24	-11	04	04	11	-04	-03	-03	-11	-05	-19	02	-02	06	-01	-03	-03								
	28	-05	-02	-05	-11	09	-25	-31	-20	06	-23	-11	-04	10	-01	-41	-12	06	15	-12	-05	-06	03	08	-19	06	-16	-07							
8-B	29	-17	-07	17	14	02	-07	00	-03	-01	01	-08	-12	-15	-03	06	12	13	00	-04	00	04	01	-06	09	-07	-01	11	-12						
	30	-09	-16	-02	00	-03	-20	-17	-21	-18	12	-15	07	02	07	-23	-10	04	13	-17	-12	04	-02	-10	-06	02	-10	36	00	06					
	31	-03	08	17	06	-08	13	23	08	04	28	08	-01	01	-02	33	35	00	-09	-04	00	-06	03	-01	04	-02	03	-10	-16	05	-03				
	32	-02	11	-03	-03	-13	07	10	15	-01	19	-04	-02	09	00	18	19	-01	-12	04	07	-19	-15	-24	-11	-21	02	-03	-21	-04	-06	64			
	33	-13	00	19	11	-07	05	14	03	-04	-01	-02	17	05	09	22	25	02	-05	-05	00	-09	13	00	00	00	00	00	-14	-09	03	59	27		
	34	-12	-10	19	15	-15	-11	20	-01	-10	09	-03	-08	-07	-02	15	25	07	00	-14	02	-04	-01	-13	05	01	-02	-16	-19	07	05	71	41	51	
	35	05	-08	-07	-09	11	-12	-21	-04	07	-12	-07	10	14	13	-23	-31	13	06	01	00	03	05	13	-01	-12	00	20	13	23	17	-37	-25	-20	-50

[1] See key to scores Table V-1.

Table V-5

WHOLE SCORE INTERCORRELATIONS--TOTAL SAMPLE

(Ns range from 364 to 434)

	Score[1]	SEX	AGE	OC	ED	UI	DDST				8B	PSI	SBI			POCL		FOOD		H	W	HES						MBOS		8-BLOCK					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
AGE	2	-03																																	
CCC	3	-12	02																																
ED	4	-07	-09	36																															
U/R	5	06	-20	-01	15																														
	6	10	45	20	08	-14																													
DDST	7	-02	44	17	09	-20	64																												
	8	14	41	04	03	-10	45	41																											
	9	06	23	09	02	-08	37	29	25																										
8-B	10	01	40	15	10	-13	39	55	34	19																									
PSI	11	06	47	17	07	-20	62	74	45	21	55																								
	12	-01	12	05	02	-12	19	23	12	21	16	30																							
SBI	13	08	00	-02	-01	-08	01	00	00	10	00	-06	24																						
	14	01	-06	-13	-14	02	-14	-20	-11	-11	-16	-19	-20	-11																					
POCL	15	10	27	06	13	-07	37	44	31	23	35	38	19	17	-26																				
	16	-02	22	18	16	-04	24	30	18	16	27	24	04	19	-20	65																			
FOOD	17	-13	06	10	05	-06	01	09	08	08	05	09	07	14	-06	09	09																		
NUT	18	-12	00	14	13	00	06	12	02	04	08	06	10	18	-17	07	08	70																	
HT	19	-06	56	14	06	-07	36	33	39	29	32	35	06	00	-11	21	14	17	10																
WT	20	-07	33	14	05	-06	22	23	21	17	18	24	02	01	-10	14	13	26	20	70															
	21	03	-08	01	11	-07	-03	02	00	15	07	03	22	16	-12	08	11	16	16	-03	-05														
	22	06	03	12	14	-02	15	23	08	19	22	21	21	09	-13	08	06	11	12	08	09	33													
HES	23	03	11	07	00	00	14	14	16	26	07	18	20	04	-04	08	07	05	-02	20	14	24	34												
	24	06	04	02	11	-01	10	17	11	18	15	15	24	12	-12	11	06	10	13	11	04	41	40	37											
	25	-07	00	13	19	-07	17	22	05	16	16	20	28	15	-19	13	07	14	22	02	05	41	41	25	33										
	26	-04	-04	-04	-07	-02	02	02	-05	-03	-09	-01	-07	00	01	00	-09	00	01	00	00	-13	-09	-13	-07	-01									
MBOS	27	00	-01	03	00	-02	00	07	-02	-02	13	13	10	-04	-06	06	02	-03	02	06	03	09	05	-11	03	07	00								
	28	-06	-12	-03	-06	14	-29	-27	-14	-09	-20	-22	-16	-10	13	-42	-15	-08	-07	-11	-06	03	-06	02	-02	-11	-05	06							
	29	00	-19	05	19	17	-17	-13	-09	-02	-03	-20	-03	05	-12	03	05	07	10	-04	-05	13	03	-04	09	01	-01	15	05						
	30	-04	-13	-03	-03	04	-21	-14	-14	-14	-02	-12	-03	-04	04	-16	-06	00	06	-09	-37	07	-07	-09	00	02	00	21	17	07					
8-B	31	-01	11	12	12	09	17	27	09	15	35	19	08	09	-13	28	28	03	06	07	02	12	13	01	07	05	-09	05	-09	16	02				
	32	-02	04	01	05	-04	07	15	13	06	13	04	07	12	-03	17	08	03	05	07	04	03	05	-05	01	04	-02	05	-13	05	-03	62			
	33	-03	00	06	14	03	05	10	02	00	07	04	07	02	03	12	11	02	04	00	-05	01	06	00	00	-03	-03	05	-04	07	03	63	42		
	34	-07	-01	13	15	04	-01	15	-03	00	16	01	01	06	-13	12	25	04	10	-01	00	12	09	-08	05	02	-09	07	-01	19	18	77	44	53	
	35	05	-12	-03	-05	00	-07	-17	00	-04	-18	-06	-03	-08	13	-21	-32	01	-06	-03	00	-04	-01	08	-03	-02	05	00	04	02	10	-40	-21	-19	-54

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[1] See key to scores Table V-1.

FOOTNOTES FOR TABLE V-6 - TABLE V-9

[1] Ns vary because a missing data intercorrelation computer program was used to generate the correlation matrix used by the factor analysis program.

[2] Principal components factor analysis with unities in the diagonals followed by a varimax rotation.

[3] Image factor analysis followed by a varimax rotation.

[4] SMC = Squared Multiple Correlation Coefficient, calculated by using all other measures to predict remaining variable.

[5] See Table V-1 for key to items.

TABLE V- 6 , WHOLE SCORE FACTOR ANALYSIS[1]: ROTATED FACTOR LOADINGS, HOME START

	Principal Components Analysis[2] (unities in diagonals) (Ns range from 163 to 192)											Image Analysis[3] (SMC[4] in diagonals) (Ns range from 163 to 192)					
Score[5]	I	II	III	IV	V	VI	VII	VIII	IX	X	h^2	I	II	III	IV	h^2	SMC[4]
1	14	-04	-04	15	-11	03	05	-10	-00	76	64.3	06	-09	09	25	08.2	35.1
2	64	04	01	05	38	-10	-21	-03	-01	-10	62.6	70	04	01	-03	49.0	57.0
3	32	06	-06	00	06	-07	48	-13	-15	-42	56.8	24	21	03	-09	11.1	30.0
4	00	12	12	-05	-05	-03	67	-08	-20	-03	53.1	-08	12	21	-07	08.6	27.0
5	-38	05	-08	15	03	-17	38	11	-13	37	51.5	-34	15	-01	02	13.9	30.0
6	81	06	09	06	10	-03	08	-15	05	02	71.2	74	10	18	10	60.6	69.1
7	84	04	17	-08	08	-12	-05	-04	-08	-07	77.4	79	09	25	-00	68.7	78.2
8	56	08	13	02	26	06	-10	-03	00	34	54.1	56	-00	15	09	34.9	47.8
9	34	12	42	10	16	-22	17	-28	20	04	53.6	32	16	43	01	31.4	50.2
10	70	09	07	01	17	-14	04	-06	-24	02	62.3	66	21	14	01	50.3	62.2
11	87	09	05	03	18	01	-10	09	-10	-06	83.1	84	10	10	06	72.5	82.9
12	36	10	49	-06	-21	-03	-05	25	32	-20	63.1	25	10	38	-00	21.7	45.7
13	-02	08	30	-21	-04	-46	-04	-12	26	24	49.8	-01	13	35	-19	17.9	38.6
14	-44	00	-19	16	07	26	-33	-20	-13	08	49.5	-32	-21	-28	18	26.2	42.9
15	59	01	12	-20	-05	-46	06	02	13	30	73.1	51	20	31	-16	41.7	68.0
16	31	-06	-00	-10	13	-75	10	00	-15	05	71.9	35	27	17	-24	28.1	61.8
17	03	-02	05	-89	11	-07	-03	-07	-01	-04	82.7	07	-08	17	-69	51.2	66.1
18	02	08	09	-87	04	-12	09	04	02	-13	82.1	04	06	21	-68	50.7	67.6
19	46	05	08	-07	76	-07	05	-00	12	-10	84.1	65	05	03	-22	47.1	75.2
20	23	-06	-03	-23	78	-05	-00	10	06	-05	73.2	45	-04	-09	-37	34.4	60.7
21	-09	10	72	-11	-04	-19	00	15	-01	-02	60.9	-08	15	52	-10	30.7	41.2
22	16	01	57	-14	05	01	18	-02	-44	14	62.1	15	03	49	-02	26.7	42.1
23	08	-03	60	13	38	08	-02	-29	-07	03	62.8	21	-12	40	09	22.5	45.2
24	02	-04	73	-01	03	-08	13	-12	-00	-06	57.9	04	-01	55	-02	30.9	41.7
25	30	07	61	-10	-12	09	-10	12	-12	05	54.4	21	01	48	05	27.7	39.5
26	-03	04	-08	-05	10	11	-03	-00	67	04	48.2	01	-07	-07	-06	01.3	14.0
27	11	02	04	-08	10	13	18	79	-03	06	70.9	06	11	-01	-10	02.5	32.4
28	-53	03	03	22	28	03	-01	14	-31	-16	55.1	-36	04	-15	05	15.9	41.2
29	-26	07	04	-07	00	-02	66	21	24	16	64.3	-29	17	10	-14	14.6	38.5
30	-19	08	-08	17	-04	-17	-13	65	02	-12	56.8	-17	24	-19	-01	12.2	33.6
31	27	78	08	-00	03	-32	14	06	-04	-03	82.3	24	78	17	-03	69.8	78.9
32	09	79	11	-10	-01	06	-06	-05	15	11	70.0	07	50	13	04	27.3	52.2
33	-02	82	-04	-09	-03	06	08	00	01	01	68.5	-04	56	-00	07	31.8	47.2
34	02	70	02	07	01	-47	16	18	-13	-20	82.2	01	82	06	-07	67.5	76.4
35	-05	-29	-03	02	-04	75	-02	-03	08	15	68.6	-11	-54	-09	21	35.9	52.9
PCT.V	15.3	7.5	8.1	5.6	5.4	6.3	4.8	4.5	3.7	4.1		14.3	7.7	6.5	4.2		

Ten factors accounted for 65.27% of the total variance.

Four factors accounted for 64.6% of the common variance.

TABLE V-7, WHOLE SCORE FACTOR ANALYSIS[1]: ROTATED FACTOR LOADINGS, CONTROL GROUP

	Principal Components Analysis[2] (unities in diagonals) (Ns[1] range from 102 to 130)													Image Analysis[3] (SMC[4] in diagonals) (Ns[1] range from 102 to 130)						
Score	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	h²	I	II	III	IV	V	h²	SMC
1	-01	-00	04	-02	19	-10	16	77	12	-06	-05	-11	70.0	-01	03	16	-07	06	03.6	32.0
2	32	-04	-07	65	02	-08	-17	-15	08	-22	26	-00	72.0	28	01	-06	61	08	45.6	58.0
3	07	-09	-05	10	21	-08	43	-60	14	02	-06	-23	70.5	19	-08	00	00	-10	05.1	39.7
4	07	17	10	07	-11	-09	79	05	-04	-13	01	-10	71.5	14	18	25	02	-19	15.2	47.0
5	-32	05	-01	02	01	12	21	36	-02	10	15	56	64.4	-36	06	-11	-07	01	14.8	36.1
6	76	-00	08	23	03	-11	-09	04	05	-02	05	-13	67.5	61	04	18	36	17	56.0	69.0
7	75	21	16	21	-02	-13	01	-13	13	15	04	-06	75.0	63	20	16	31	01	54.8	74.5
8	41	-01	-02	51	-06	-02	-04	27	-09	-35	-15	-06	66.6	22	01	12	53	03	34.4	54.2
9	31	03	31	20	09	-16	-22	-03	-05	-01	-46	-21	57.5	24	-03	36	24	09	25.2	46.8
10	54	20	07	22	-13	-24	08	-18	15	-22	19	20	64.1	47	27	08	34	01	41.7	55.6
11	24	-08	11	09	-09	-07	24	07	-06	-00	03	01	82.2	64	-01	22	28	06	54.3	75.4
12	10	-14	39	01	05	-18	02	11	-12	-13	36	-46	60.0	28	-13	33	-01	-14	22.1	39.0
13	-27	03	15	07	-17	-55	-22	19	-10	11	14	-22	61.0	02	07	02	-02	-40	16.7	38.9
14	03	01	-12	-03	18	03	-26	-08	-02	-04	-04	77	72.5	-12	05	-20	08	41	22.7	41.6
15	35	12	01	09	-01	-78	15	04	-01	-01	-02	01	77.6	57	18	06	13	-21	42.5	68.0
16	13	17	-02	07	-00	-20	09	-11	03	-23	-01	-03	76.6	44	25	-02	05	-31	35.1	61.3
17	-04	07	09	13	-87	-09	-01	-12	-07	-00	-00	-09	81.6	00	06	04	21	-56	36.6	62.6
18	06	10	06	06	-90	-05	08	01	08	01	-01	-08	84.8	03	10	06	17	-55	34.8	64.3
19	15	-00	04	82	-05	-04	01	04	02	01	-07	00	80.1	05	-04	04	74	-12	57.1	71.6
20	09	-03	08	79	-14	-08	14	-03	-13	13	-03	-03	73.3	05	-01	08	67	-19	48.9	65.4
21	-08	06	55	-20	-15	-13	31	-03	24	-26	-12	-16	65.6	-01	11	50	-17	-31	39.0	48.5
22	33	14	66	01	-02	01	-05	08	-21	10	-04	-15	65.3	23	05	53	08	-05	34.2	47.3
23	01	-04	69	22	16	-00	-10	-06	-23	-34	-07	00	74.5	01	-05	56	20	05	35.7	55.2
24	08	-08	68	14	-08	08	-01	26	25	-12	06	-05	65.8	-03	-03	56	14	-09	34.7	50.2
25	04	-07	76	-09	-18	-12	22	-19	05	25	-09	-02	79.5	11	-11	55	-11	-31	43.2	61.0
26	01	-19	-12	-00	02	11	-13	-06	01	79	-02	03	71.3	-04	-23	-20	-06	07	10.1	29.8
27	35	09	-05	-22	-05	-07	00	03	70	12	-05	-09	70.3	23	13	01	-12	-01	08.7	36.6
28	-25	-04	02	13	08	42	-08	06	55	-11	-13	12	62.7	-38	-01	06	04	22	19.8	41.0
29	-45	37	12	09	-11	-25	27	13	26	22	11	-04	65.6	-22	35	02	-13	-44	37.6	51.5
30	-31	02	03	-02	-13	06	-04	-03	34	-01	-65	11	67.5	-40	02	05	-07	-15	19.0	52.2
31	08	94	01	-03	-03	-10	07	-04	01	-09	04	03	91.7	10	91	02	-03	-07	84.2	92.6
32	04	76	05	04	-05	-10	01	-11	-10	-06	-09	07	63.8	03	70	05	06	-05	49.9	64.2
33	18	82	-07	-07	-01	06	05	13	-04	-05	-05	03	73.8	04	80	03	01	10	65.0	75.9
34	-12	89	-03	-03	-08	-11	03	03	18	02	12	-07	87.5	-03	88	-04	-09	-14	80.3	90.6
35	-05	-48	02	02	08	14	34	06	-20	-01	-57	04	74.1	-16	-48	22	04	18	34.0	69.1
PCT.V	10.1	10.2	7.6	7.2	5.5	6.1	4.5	4.3	4.1	3.9	3.9	4.2		8.5	9.9	6.0	6.8	5.1		

Twelve factors accounted for 71.7% of the total variance.

Five factors accounted for 64.2% of the common variance.

TABLE V-3, WHOLE SCORE FACTOR ANALYSIS[1]: ROTATED FACTOR LOADINGS, HEAD START

	Principal Components Analysis[2] (unities in diagonals) (Ns[1] range from 93 to 112)													Image Analysis[3] (SMC[4] in diagonals) (Ns[1] range from 93 to 112)						
Score	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	h^2	I	II	III	IV	V	h^2	SMC
1	13	08	12	-21	-22	-56	01	04	-04	09	-17	08	49.1	11	10	-07	-00	18	06.2	31.5
2	43	-01	-05	08	08	-20	01	-16	14	-62	03	08	67.8	45	02	-03	52	13	49.8	65.7
3	11	-24	19	00	-10	56	-06	25	-05	-05	-10	21	54.9	07	-14	18	09	-36	19.5	40.9
4	07	-05	11	-14	-01	81	08	04	05	01	11	02	71.3	08	-04	07	-06	-56	33.4	54.3
5	-01	17	-20	-08	-07	29	08	12	04	11	-01	59	54.7	-03	20	-10	-01	-27	12.6	40.7
6	69	-02	05	-16	-24	-05	-06	03	03	-20	08	10	63.1	65	04	02	19	03	46.5	66.7
7	86	-16	04	09	01	10	06	-05	09	-07	09	-01	81.1	75	-15	14	14	-05	62.9	84.0
8	66	-01	-04	00	-15	-11	-06	12	15	-18	04	-10	56.1	59	-02	01	22	04	39.8	57.7
9	21	02	05	-01	-17	-12	-38	17	02	-37	-33	15	53.9	22	07	12	35	05	18.9	43.2
10	65	-10	04	-07	42	11	-03	05	07	-00	01	-20	67.7	56	-18	10	-07	12	37.7	65.6
11	84	05	08	10	-04	04	-10	-15	08	-07	-08	13	79.0	74	04	26	15	09	64.6	80.8
12	25	-02	04	01	10	17	-77	-10	-06	04	-18	07	75.2	22	06	36	-07	08	19.4	61.9
13	-09	-06	11	24	02	-17	-72	-07	05	11	17	-10	68.9	-04	-07	35	-09	22	18.4	42.7
14	04	-19	21	-04	19	-40	24	08	-52	-04	22	13	68.5	-04	-01	-01	-02	35	12.3	40.3
15	35	-21	05	-12	-03	-03	-01	10	78	-08	15	09	84.1	58	-26	-02	02	-29	48.9	76.7
16	17	-27	10	01	-03	03	05	02	81	-06	02	12	78.8	38	-29	04	07	-43	42.4	69.3
17	03	-06	16	81	07	-11	-04	14	-04	-27	-00	-01	80.5	-13	-09	45	44	17	44.8	65.0
18	-02	07	07	85	-10	08	-14	-00	-06	01	05	-01	76.9	-20	-04	46	25	15	33.8	62.8
19	20	07	-05	00	-03	09	06	03	02	-91	-00	05	89.7	24	11	-09	74	-02	62.7	79.3
20	04	-01	-03	17	-16	08	09	02	-02	-83	-12	-08	78.5	04	02	-05	78	-08	61.3	70.5
21	-07	10	82	16	06	-19	04	02	11	08	-04	-06	77.8	-05	06	53	-06	-07	29.3	61.0
22	01	-08	72	-05	-03	15	-11	-04	-20	-08	01	15	63.3	00	03	46	01	-14	23.0	45.5
23	03	04	28	02	02	-13	-05	-08	13	-13	-09	68	61.4	12	12	24	11	-04	09.7	41.5
24	26	00	62	15	-02	07	-02	17	11	02	00	09	53.2	21	-02	47	03	-13	28.2	49.1
25	-04	15	56	15	-01	38	-25	-37	21	08	-06	-16	77.9	-01	-03	58	-09	-24	39.8	63.6
26	10	04	-07	03	-11	10	01	-01	06	07	82	-09	73.3	13	-01	-07	-07	-08	03.2	23.2
27	-07	08	02	-16	81	-04	-09	13	04	01	06	10	73.6	01	13	03	-24	11	08.7	45.5
28	-27	18	-17	29	-04	-01	-06	-34	-22	08	-28	30	56.4	-36	19	08	02	16	19.2	50.8
29	-05	03	04	13	10	20	18	76	14	06	-10	-06	72.5	-06	-07	03	-01	-13	02.6	44.1
30	-12	-01	-03	16	69	08	-01	-01	-19	16	-14	-12	62.3	-24	-03	11	-19	12	11.9	41.6
31	14	-87	-01	-01	-02	03	01	03	19	03	-05	-04	82.3	19	-81	-05	01	-10	69.7	86.6
32	05	-63	-25	-10	-01	-14	-10	08	11	-12	03	-36	67.1	13	-64	-26	06	19	53.7	67.5
33	-03	-79	04	-04	05	11	-15	-09	01	-02	14	20	73.8	06	-65	05	-02	-06	42.9	69.0
34	02	-80	02	14	-05	18	23	-03	10	14	-15	-19	83.3	-03	-82	-00	-03	-12	69.4	81.4
35	-15	39	-02	07	19	-13	-31	49	-28	-06	15	25	73.4	-15	44	11	-00	25	29.1	58.0
PCT.V	10.1	8.5	6.6	5.3	4.7	5.9	4.9	3.9	5.7	6.8	3.4	4.2		9.9	7.9	5.9	6.0	4.0		

Twelve factors accounted for 70% of the total variance.

Five factors accounted for 58.0% of the common variance.

TABLE V-9, WHOLE SCORE FACTOR ANALYSIS[1]: ROTATED FACTOR LOADINGS. TOTAL SAMPLE

Score[5]	Principal Components Analysis[2] (unities in diagonals) (Ns[1] range from 364 to 434)										Image Analysis[3] (SMC[4] in diagonals) (Ns[1] range from 364 to 434)					
	I	II	III	IV	V	VI	VII	VIII	IX	h^2	1	II	III	IV	h^2	SMC
1	13	-03	09	-24	-03	-33	55	-06	20	54.4	07	-05	04	-21	05.4	17.2
2	71	-01	-08	02	-11	-16	-20	-06	-21	63.8	64	02	-09	14	43.4	50.6
3	14	04	05	10	-07	70	-05	-05	-02	54.1	14	12	13	17	08.3	24.1
4	00	09	12	05	-13	72	23	-04	03	61.7	03	15	21	11	07.8	27.0
5	-20	03	-09	-06	04	26	55	-03	-16	44.1	-23	04	-04	01	05.8	18.2
6	74	03	10	-06	-10	13	-05	-15	23	66.2	70	06	12	-02	51.3	58.9
7	73	15	18	-01	-17	15	-25	03	20	73.5	72	18	20	01	59.4	69.2
8	66	02	06	03	-04	-10	17	-11	04	50.1	55	00	05	05	31.1	38.3
9	39	03	31	06	-10	-08	10	-23	-09	33.8	35	04	22	06	17.8	27.9
10	62	18	14	-05	-19	11	-11	22	01	54.8	56	25	16	03	40.1	50.6
11	78	02	18	-07	-08	14	-20	08	19	74.8	74	07	18	-01	58.2	69.2
12	17	01	50	02	-16	-09	-18	07	22	40.1	22	00	39	-05	20.3	32.9
13	-14	07	26	27	-41	-33	03	-16	15	49.0	-01	09	24	10	07.5	21.6
14	-12	04	-20	-10	46	-17	-00	-14	-09	33.6	-18	-13	-26	-09	12.3	22.3
15	43	11	05	01	-68	01	13	-07	20	71.9	50	28	20	-00	36.5	63.0
16	23	12	-00	01	-77	11	01	-05	-15	70.2	34	32	16	04	24.8	55.1
17	02	03	14	83	-03	04	-04	-01	09	72.5	02	-00	23	59	39.9	55.5
18	-03	07	17	79	-10	14	-05	09	17	73.4	-01	06	28	56	39.2	57.0
19	68	-04	-05	38	01	01	08	-07	-37	76.3	56	-04	-06	41	48.6	67.5
20	49	-07	-08	51	02	04	03	-05	-36	64.8	40	-04	-07	52	43.3	55.8
21	-13	05	69	08	-16	-04	01	14	-11	56.0	-08	07	54	06	30.1	36.9
22	15	09	68	01	07	17	04	-04	-02	52.6	14	03	50	04	27.1	34.6
23	21	-08	58	-04	11	-01	08	-29	-32	58.3	20	-12	35	01	17.9	34.3
24	10	01	69	04	-03	-01	12	02	-12	52.1	10	-01	50	04	26.7	33.5
25	05	-04	66	11	-08	22	-17	07	14	55.8	12	-03	54	05	31.3	37.5
26	00	-05	-20	13	12	-03	-04	02	40	23.9	01	-08	-12	01	02.0	09.4
27	12	02	06	-06	-05	-01	08	75	07	59.4	02	06	09	-02	01.2	16.7
28	-25	-06	-01	-07	28	-04	-00	22	-54	49.5	-31	-09	-10	01	11.5	29.0
29	-20	12	06	16	-17	16	54	30	-04	52.2	-23	20	13	12	12.6	23.8
30	-17	06	00	05	11	-07	-02	66	-13	49.8	-25	09	00	07	07.7	25.1
31	17	89	08	-01	-18	06	02	05	-05	86.3	14	82	12	03	71.0	81.0
32	11	75	02	09	02	-11	04	-05	12	61.0	07	58	02	04	34.1	46.9
33	03	79	00	-01	08	02	05	-01	06	63.7	-01	63	01	02	39.2	48.3
34	-06	81	02	02	-24	13	-06	17	-18	80.6	-06	81	08	07	67.0	76.0
35	01	-44	05	07	49	-03	29	06	23	58.3	-08	-51	-03	-03	26.4	43.8
PCT.V	12.9	8.5	8.3	5.7	6.1	4.6	3.9	4.3	4.0		11.6	7.9	5.7	3.6		

Nine factors accounted for 58.4% of the total variance.

Four factors accounted for 69.0% of the common variance.

Table VI-1

SEVEN MONTH HOME START CHILD OUTCOMES: HOME START TO CONTROL

Analysis of covariance for spring 1974 scores,
using pretest as the covariate
(Six summative sites included)

	Home Start			Control						
	N	Spring Mean	Adj. Spring Mean	N	Spring Mean	Adj. Spring Mean	F	p	ω^2	Summary
School Readiness										
Preschool Inventory	140	15.3	15.6	85	13.5	13.0	19.3	<.05	.08	HMS>CNT
DDST Language	163	29.6	29.5	109	28.7	28.8	4.1	<.05	.01	HMS>CNT
8-Block Child Score	154	4.4	4.3	99	3.8	3.9	3.7	NS	.01	
8-Block Child Talk	167	2.0	2.0	115	.4	1.4	10.5	<.05	.03	HMS>CNT
Social-Emotional Development										
SBI Task Orientation	191	24.4	24.3	126	22.9	23.0	6.5	<.05	.02	HMS>CNT
SBI Extra-Introversion	190	23.7	23.7	127	23.5	23.5	<1	NS	.00	
SBI Hostility Tolerance	189	18.7	18.6	128	19.5	19.6	3.0	NS	.01	
POCL Test Orientation	184	24.0	24.1	124	24.5	24.3	<1	NS	.00	
POCL Sociability	188	17.7	17.6	124	18.3	18.4	1.7	NS	.00	
DDST Personal-Social	180	11.0	11.0	122	11.1	11.1	<1	NS	.00	
Physical Development										
Height (inches)	187	41.0	41.1	125	41.0	40.9	1.3	NS	.00	
Weight (pounds)	188	36.9	37.0	126	36.5	36.3	4.6	<.05	.01	HMS>CNT
DDST Gross Motor	144	11.8	11.8	100	11.9	11.8	<1	NS	.00	
DDST Fine Motor	175	12.2	12.2	119	12.3	12.2	<1	NS	.00	
Nutrition										
Milk Group	192	1.3	1.3	130	1.1	1.1	5.7	<.05	.01	HMS>CNT
Meat Group	192	1.3	1.3	130	1.2	1.2	5.7	<.05	.01	HMS>CNT
Egg Group	192	.24	.25	130	.23	.23	<1	NS	.00	
A-Vegetables	192	.09	.09	130	.10	.10	<1	NS	.00	
Citrus Fruits	192	.20	.20	130	.22	.22	<1	NS	.00	
Other Vegetables	192	1.5	1.5	130	1.6	1.6	<1	NS	.00	
Breads & Cereals	192	3.3	3.3	130	3.3	3.3	<1	NS	.00	
Nutrition Total	192	8.0	8.0	130	7.8	7.8	<1	NS	.00	
Vitamins	175	.34	.33	128	.26	.26	1.7	NS	.00	
Medical Care										
Immunization Total	192	8.6	8.6	126	8.4	8.4	1.7	NS	.00	
Months Since Doctor Visit[1]	188	4.6		121	6.4		6.3	<.05	.02	HMS<CNT
Checkup/Something Wrong	180	.49	.49	125	.22	.22	24.8	<.05	.07	HMS>CNT
Been to Dentist[1]	192	.88		123	.17		303.	<.05	.49	HMS>CNT

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[1] Analysis of variance on post scores.

Table VI-2

SEVEN MONTH HOME START MOTHER OUTCOMES: HOME START TO CONTROL

Analysis of covariance for spring 1974 scores,
using pretest as the covariate
(Six summative sites included)

	Home Start			Control						
	N	Spring Mean	Adj. Spring Mean	N	Spring Mean	Adj. Spring Mean	F	p	ω^2	Summary
Mother/Child Relationship										
H/S HES Mother Involvement	184	10.7	10.6	120	9.9	10.0	6.6	<.05	.02	HMS>CNT
H/S HES Household Tasks	189	3.7	3.6	130	3.0	3.0	16.6	<.05	.05	HMS>CNT
MBOS Supportive	172	7.9	7.8	119	7.4	7.5	1.8	NS	.00	
MBOS Punitive	174	5.4	5.4	122	5.3	5.3	<1	NS	.00	
Mother as Teacher										
H/S HES Mother Teaches	175	3.7	3.7	125	3.1	3.2	7.8	<.05	.02	HMS>CNT
8-Block Request Talk	167	.55	.57	115	.46	.45	1.8	NS	.00	
8-Block Diagnostic	165	.91	.89	112	.57	.59	9.0	<.05	.03	HMS>CNT
8-Block Talk About	167	1.39	1.37	115	.94	.96	12.6	<.05	.04	HMS>CN
8-Block Interactions/min.	157	7.76	7.67	102	6.18	6.31	7.1	<.05	.02	HMS>CN
8-Block Mean Length String	160	4.7	4.7	106	5.0	5.0	<1	NS	.00	
8-Block Feedback	166	1.4	1.4	113	1.2	1.2	2.1	NS	.00	
Home Materials for Child										
H/S HES Books	191	4.2	4.2	129	3.8	3.8	10.2	<.05	.03	HMS>CN
H/S HES Playthings	191	3.9	3.8	130	2.7	2.8	34.1	<.05	.09	HMS>CN
Use of Community Resources										
Welfare department	185	.39	.38	120	.32	.35	<1	NS	.00	
Food Stamps Program	182	.43	.42	117	.38	.40	<1	NS	.00	
Medicaid	184	.27	.25	120	.20	.23	<1	NS	.00	
Food commodities	179	.04	.04	120	.03	.03	<1	NS	.00	
Local hospital	174	.60	.60	109	.48	.48	3.68	NS	.01	
Public health clinic	177	.62	.61	115	.61	.62	<1	NS	.00	
Mental health clinic	189	.07	.04	125	.04	.05	<1	NS	.00	
Family counseling agencies	187	.02	.01	125	.01	.01	<1	NS	.00	
Planned Parenthood	186	.24	.23	113	.18	.19	<1	NS	.00	
Day care program	188	.04	.04	124	.02	.03	<1	NS	.00	
Recreational programs	191	.10	.10	124	.06	.06	1.26	NS	.00	
Legal aid program	187	.05	.05	122	.01	.01	3.18	NS	.01	
Housing authority	189	.19	.19	120	.11	.12	6.07	<.05	.00	HMS>CN
State Employment office	177	.07	.07	119	.03	.03	2.10	NS	.00	
Job training programs	189	.05	.05	124	.01	.01	3.14	NS	.01	
Organization Total	167	5.8	5.8	115	5.5	5.6	6.9	<.05	.02	HMS>CN

Table VI-3

SEVEN MONTH HOME START CHILD OUTCOMES: HOME START TO HEAD START

Analysis of covariance for spring 1974 scores,
using pretest as the covariate
(four summative sites included)

	Home Start			Head Start						
	N	Spring Mean	Adj. Spring Mean	N	Spring Mean	Adj. Spring Mean	F	p	ω^2	Summary
School Readiness										
Preschool Inventory	97	17.2	17.1	90	15.3	15.3	7.4	<.05	.03	HMS>HDS
DDST Language	112	30.3	29.9	96	29.6	29.9	<1	NS	.01	
8-Block Child Score	110	4.7	4.6	85	4.4	4.5	<1	NS	.01	
8-Block Child Talk	111	2.2	2.2	102	1.8	1.8	2.9	NS	.00	
Social-Emotional Development										
SBI Task Orientation	132	24.8	24.9	110	24.2	24.1	1.9	NS	.00	
SBI Extra-Introversion	131	23.7	23.9	110	23.5	23.3	1.6	NS	.00	
SBI Hostility Tolerance	130	18.7	18.7	111	19.2	19.2	<1	NS	.00	
POCL Test Orientation	125	24.6	24.5	110	24.7	24.7	<1	NS	.00	
POCL Sociability	128	18.4	18.4	111	18.4	18.5	<1	NS	.00	
DDST Personal-Social	120	11.1	11.2	102	11.1	11.1	<1	NS	.00	
Physical Development										
Height (inches)	128	41.6	41.5	110	41.3	41.4	<1	NS	.00	
Weight (pounds)	129	37.7	38.3	110	38.5	37.8	2.1	NS	.01	
DDST Gross Motor	105	12.1	12.1	87	12.1	12.0	<1	NS	.01	
DDST Fine Motor	120	12.6	12.5	107	12.7	12.8	2.7	NS	.01	
Nutrition										
Milk Group	132	1.3	1.4	112	1.7	1.7	9.6	<.05	.03	HMS<HDS
Meat Group	132	1.3	1.3	112	1.3	1.3	2.0	NS	.00	
Egg Group	132	.27	.27	112	.17	.17	6.9	<.05	.02	HMS>HDS
A-Vegetables	132	.08	.08	112	.13	.13	2.7	NS	.01	
Citrus Fruits	132	.20	.20	112	.56	.55	37.9	<.05	.13	HMS<HDS
Other Vegetables	132	1.5	1.5	112	2.1	2.1	20.8	<.05	.08	HMS<HDS
Breads & Cereals	132	3.2	3.2	112	3.3	3.3	<1	NS	.00	
Nutrition Total	132	8.0	8.0	112	9.3	9.3	22.8	<.05	.08	HMS<HDS
Vitamins	117	.37	.40	110	.46	.43	<1	NS	.00	
Medical Care										
Immunization Total	132	8.6	8.6	112	9.0	8.9	8.3	<.05	.03	HMS<HDS
Months Since Doctor Visit[1]	130	5.4		110	3.8		5.4	<.05	.02	HMS>HDS
Checkup/Something Wrong	124	.49	.52	112	.38	.35	6.7	<.05	.02	HMS<HDS
Been to Dentist[1]	132	.93		112	.87		3.0	NS	.00	

[1] Analysis of variance on post scores.

Table VI-4

SEVEN MONTH HOME START MOTHER OUTCOMES: HOME START TO HEAD START

Analysis of covariance for spring 1974 scores,
using pretest as the covariate

(Four summative sites included)

	Home Start			Head Start						
	N	Spring Mean	Adj. Spring Mean	N	Spring Mean	Adj. Spring Mean	F	p	ω^2	Summary
Mother/Child Relationship										
H/S HES Mother Involvement	127	10.6	10.7	109	10.3	10.2	3.2	NS	.01	
H/S HES Household Tasks	130	3.6	3.6	115	3.4	3.4	3.8	NS	.01	
MBOS Supportive	116	7.8	7.8	86	7.3	7.3	3.5	NS	.01	
MBOS Punitive	117	5.5	5.5	87	5.1	5.1	2.7	NS	.01	
Mother as Teacher										
H/S HES Mother Teaches	121	3.9	4.0	104	3.6	3.5	6.7	<.05	.03	HMS>HDS
8-Block Request Talk	111	.56	.56	102	.58	.59	<1	NS	.00	
8-Block Diagnostic	111	.91	.89	102	.87	.89	<1	NS	.00	
8-Block Talk About	111	1.15	1.15	102	1.16	1.15	<1	NS	.00	
8-Block Interactions/min.	103	7.79	7.54	89	7.03	7.33	<1	NS	.00	
8-Block Mean Length String	105	4.5	4.8	91	5.2	4.9	<1	NS	.00	
8-Block Feedback	110	1.3	1.3	100	1.4	1.4	<1	NS	.00	
Home Materials for Child										
H/S HES Books	131	4.3	4.4	112	4.6	4.4	<1	NS	.00	
H/S HES Playthings	131	3.8	3.9	112	3.7	3.6	3.4	NS	.01	
Use of Community Resources										
Welfare department	126	.21	.21	110	.29	.28	2.89	NS	.00	
Food Stamps Program	125	.38	.39	112	.36	.35	<1	NS	.00	
Medicaid	125	.14	.17	110	.26	.23	2.10	NS	.00	
Food commodities	120	.00	.00	111	.02	.02	2.16	NS	.01	
Local hospital	120	.61	.61	108	.57	.57	<1	NS	.00	
Public health clinic	121	.64	.64	109	.60	.59	<1	NS	.00	
Mental health clinic	129	.05	.05	112	.03	.03	1.19	NS	.00	
Family counseling agencies	129	.00		110	.02		2.37	NS	.01	
Planned Parenthood	127	.25	.25	108	.22	.22	<1	NS	.00	
Day care program	129	.03	.11	109	.63	.54	73.82	<.05	.24	HMS<HDS
Recreational programs	131	.08	.09	112	.15	.14	1.48	NS	.00	
Legal aid program	128	.02	.02	110	.01	.01	<1	NS	.00	
Housing authority	131	.11	.16	111	.20	.14	<1	NS	.00	
State Employment office	121	.10	.10	110	.10	.10	<1	NS	.00	
Job training programs	129	.05	.06	112	.05	.05	<1	NS	.00	
Organization Total	114	5.9	6.1	105	6.2	6.0	<1	NS	.00	